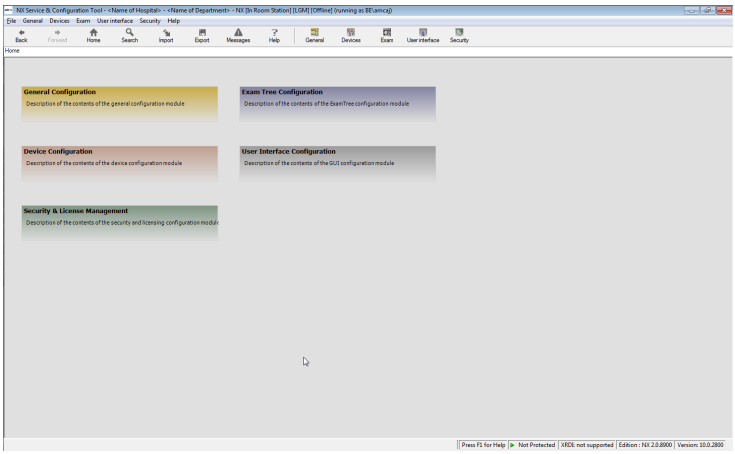
MUSICA Acquisition Workstation

Key User Manual



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AGFA HealthCare

Contents

Introduction to this Manual

Topics:

Scope of this Manual

This manual contains information for the safe and effective operation of NX key user tasks and the usage of the NX Service and Configuration Tool.

About the safety notices in this document

The following samples show how warnings, cautions, instructions and notes appear in this document. The text explains their intended use.

DANGER:
A danger safety notice indicates a hazardous situation of direct, immediate danger for a potential serious injury to a user, engineer, patient or any other person.

WARNING:
A warning safety notice indicates a hazardous situation which can lead to a potential serious injury to a user, engineer, patient or any other person.

CAUTION:
A caution safety notice indicates a hazardous situation which can lead to a potential minor injury to a user, engineer, patient or any other person.

An instruction is a direction which, if it is not followed, can cause damage to the equipment described in this manual or any other equipment or goods and can cause environmental pollution.

A prohibition is a direction which, if it is not followed, can cause damage to the equipment described in this manual or any other equipment or goods and can cause environmental pollution.

Note: *Notes provide advice and highlight unusual points. A note is not intended as an instruction.*

Disclaimer

Agfa assumes no liability for use of this document if any unauthorized changes to the content or format have been made.

Every care has been taken to ensure the accuracy of the information in this document. However, Agfa assumes no responsibility or liability for errors, inaccuracies, or omissions that may appear in this document.

Agfa reserves the right to change the product without further notice to improve reliability, function or design. This manual is provided without warranty of any kind, implied or expressed, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

In the United States, Federal law restricts this device to sale, distribution and use by, or on order of, a licensed physician.

Introduction to NX Service and Configuration Tool

Topics:

Intended Use

The NX Service and Configuration Tool is used for configuring NX Workstations.

It provides means to:

- Configure the devices attached to the NX station.
- Configuring examination trees and the sequence in which the examinations and Exposure types can be selected in the NX GUI.
- Configure the functional behavior of the NX workstation.
- Configure the security settings of the NX workstation.
- Restore previous configuration settings.

After installation the NX Service and Configuration Tool can only be accessed by Agfa service and the Key user.

Intended User

This manual is written for trained users of Agfa products. Users are considered as the persons who actually handle the equipment as well as the persons having authority over the equipment. Before attempting to work with this equipment, the user must read, understand, note and strictly observe all warnings, cautions and safety markings on the equipment.

The target audience for this manual is the Key user. The Key user is the application specialist of the hospital with a good knowledge of computer networking and examination tree configuration.

In a real-life situation the Key user will use the NX Service and Configuration Tool to modify the basic configuration performed by Agfa service. If help is needed, the user should contact the IT Department of the site or Agfa service.

Safety Directions

CAUTION:
Strictly observe all warnings, cautions, notes and safety markings within this document and on the product.

WARNING:
Safety is only guaranteed when an Agfa certified field service engineer has installed the product.

CAUTION:
All Agfa medical products must be used by trained and qualified personnel.

WARNING:
The user is responsible for judging image quality and controlling environmental conditions for diagnostic softcopy or print viewing.

WARNING:
A software algorithm error leading to an image processing failure can cause loss of diagnostic information.

WARNING:
A configuration error leading to an image processing failure can cause loss of diagnostic information.

WARNING:
The user must follow the hospital quality assurance procedures for covering the risks resulting from errors in the image processing

WARNING:
Insufficient image quality can be caused by incorrect initialization of the cassette and plate (resulting in a bad plate type), Incorrect change of default image processing parameters, patient category or modality settings, sending images to a not supported printer.

CAUTION:
To avoid images being lost due to a power failure, the workstation and the Digitizer have to be connected to uninterruptable power supply (UPS) or an institutional standby

generator. In case of a power failure, the UPS will allow to finalize exposed images that are being scanned.

Note: *Do not position the NX Service and Configuration Tool workstation so that it is difficult to disconnect the mains power connection.*

WARNING:
The following actions may lead to serious risk of injury and damage to the equipment as well as making the warranty void:

Changes, additions or maintenance to the Agfa products carried out by persons without appropriate qualifications and training.

Using unapproved spare parts

WARNING:
Improper changes, additions, maintenance or repair of the equipment or the software can lead to personal injury, electrical shock and damage to the equipment. Safety is only guaranteed when changes, additions, maintenance or repairs are carried out by an Agfa certified field service engineer. A non certified engineer performing a modification or service intervention on a medical device, acts on his own responsibility and makes the warranty void.

Note: *Incorrect IPCtrl values on the tag ExpDose can cause ghost images on the cassette.*

Note: *Every reasonable precaution has been taken during the manufacturing of NX to safeguard the health and safety of persons who will operate this system. Cautions, warnings and notes must be observed at all times.*

Using the NX Service and Configuration Tool

Topics:

About NX Service and Configuration Tool Versions

The NX Service and Configuration Tool has different versions:

"Inroom" online NX Service and Configuration Tool	To be used to configure an in-room NX. Runs on NX itself.
CMS online NX Service and Configuration Tool	To be used to configure a CMS NX. Runs on the CMS NX itself.
Offline NX Service and Configuration Tool	Runs on a separate (non-NX) PC. Eg. the laptop of a Service Engineer. This version is used to prepare an (online) configuration. At startup, you must choose whether the NX Service and Configuration Tool must run in In-room mode or CMS mode (to create a configuration for an in-room or a CMS NX). The manual describes the inroom online version of the NX Service and Configuration Tool.

Related Links

Using the Offline NX Service and Configuration Tool on page 270

Prerequisites

- The user needs local administrator rights to load/save/activate the online NX Service and Configuration Tool, independent of the role assigned in NX.

Licenses

The NX Service and Configuration Tool requires licenses available on the system. Otherwise the tool will not start and an error dialog box is shown at startup (except for the offline NX Service and Configuration Tool).

Enabling and disabling licenses in the NX Service and Configuration Tool has an important impact on the GUI and verification logic of the NX Service and Configuration Tool!

More on licenses: “Managing Licenses” .

Related Links

Managing Licenses on page 148

Starting the NX Service and Configuration Tool

To Start the NX Service and Configuration Tool, click the NX Service and Configuration Tool icon on the desktop.

The Start dialog box appears, with the options listed below.

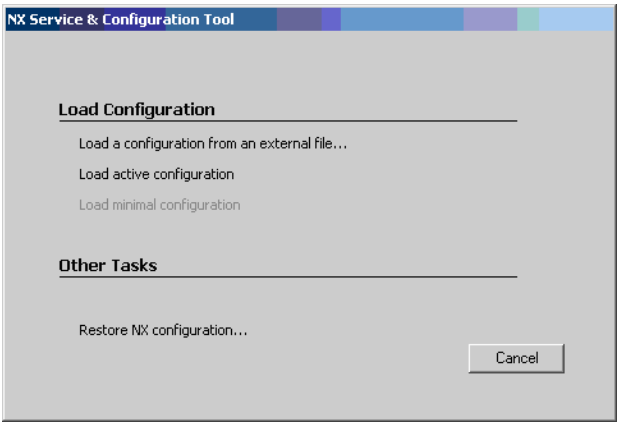


Figure 1: NX Service and Configuration Tool - Start dialog box

Load a configuration from an external file	Allows loading a previously exported NX configuration from an xml file (so called 'export file'). Only export files from NX Service and Configuration Tool versions that are equal to or older than current version can be loaded. It is not possible to load a configuration from a newer version of the NX Service and Configuration Tool! The NX Service and Configuration Tool only allows create a configuration for an NX with the same version!
Load active configuration	Loads the current NX configuration from the NX database to the NX Service and Configuration Tool (makes a copy)
Load minimal configuration	Loads a pre-defined minimal configuration to the NX Service and Configuration Tool. Allowing you to work further on it in order to obtain a complete configuration.
Restore NX configuration	Configuration backups are automatically created by the NX Service and Configuration Tool before activating a new configuration. With 'Restore NX configuration' it is possible to restore such a previous backup in the NX database.

Clicking on a backup, will display the description entered by the person when doing the activation.

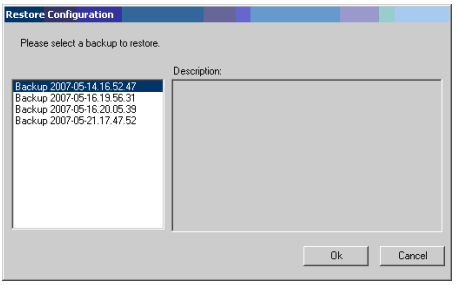


Figure 2: NX Service and Configuration Tool - Restore dialog box

These backups are stored in D:\Agfa\Healtcare\NX \Backup\ConfigurationTool

Closing the NX Service and Configuration Tool

To close the NX Service and Configuration Tool, go to the File menu and select Close.

The Close dialog box appears, with the following options.

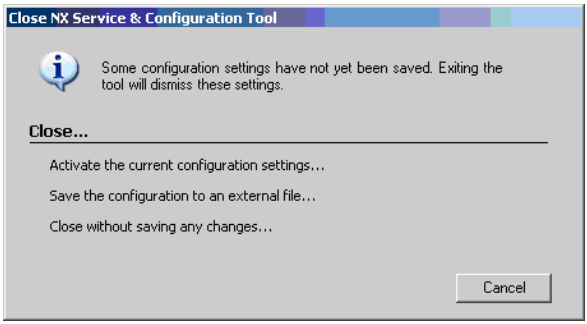


Figure 3: NX Service and Configuration Tool - Close dialog box

Activate the current configuration settings	Will load the current configuration (as shown in the NX Service and Configuration Tool screens) in the NX database. First a verification will be done. If errors are detected, the activation will stop. The errors need to be solved first. You will be asked to enter a name and a short description before activation. Prior to the activation, the NX Service and Configuration Tool will create a backup of the current NX database configuration. This backup will be stored in the folder D:\Agfa\Healtcare\NX\Backup\ConfigurationTool. It is possible to restore it later. If the NX Workstation is connected to a Central Monitoring System, the CMS must be restarted to synchronize with the new configuration of the NX Workstation.
Save the configuration to an external file	Allows saving the current configuration work to an xml file. The configuration is not verified. The xml file can later be loaded in the NX Service and Configuration Tool again.
Close without saving any changes	Closes the NX Service and Configuration Tool. All changes will be lost.
Cancel	Closes the Closure dialog box, the NX Service and Configuration Tool is not quit.

Note: *For activating a configuration, a password is required. The password is available to your local Agfa representative and changed on a regular base.*

Related Links

Verifying a Configuration on page 33

Using the File Menu

Topics:

Loading the Active Configuration

When starting up the NX Service and Configuration Tool, the user can choose to load a temporary copy (snapshot) of the NX database in the Workspace via File > Load active configuration:

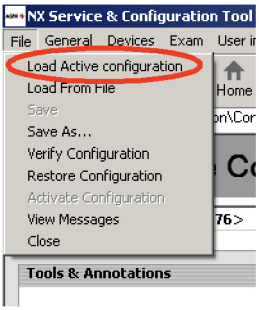


Figure 4: NX Service and Configuration Tool - File Menu

He may then work on this temporary copy. Once all modifications have been completed, he can store all the modifications in one transaction to the NX database on the system (via Activate Configuration):

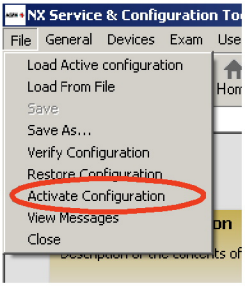


Figure 5: NX Service and Configuration Tool - File Menu

This will prevent intermediate and/or unverified modifications of configuration settings ending up in the NX database.

Adapting the configuration in the workspace is risky as there is no auto save of modifications. Finish adaptations to the configuration in one session and then store modifications to the database.

Loading a Configuration from File

Loads a configuration from an external file.

Loading a Partial Configuration from File

Via the menu 'File – Partial load from file' it is possible to import a part of the configuration.

This allows configuration replication between NX systems that share common settings.

Existing settings will be overwritten!

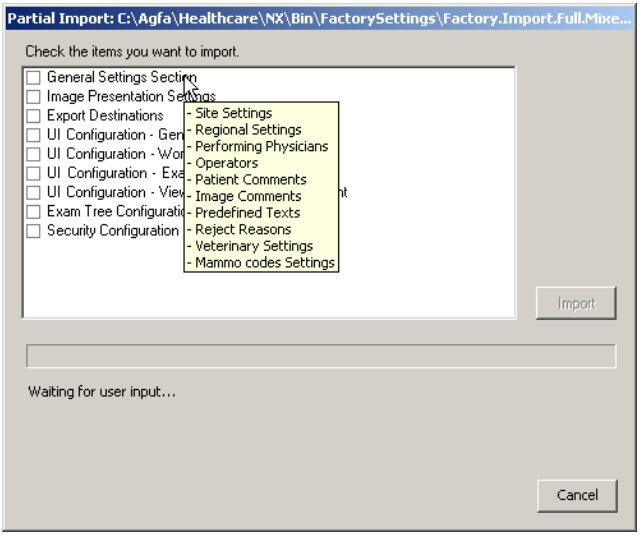


Figure 6: NX Service and Configuration Tool - Partial Import dialog box

When hovering over an item, its content is displayed.

The items that can be imported selectively are listed below. Upon import of an item (e.g. General Settings) all sub-items contained within the item are imported along (i.c. Site settings, Performing physicians list, etc.):

Item	Contains	In-room	Central
General Settings Section			
	Site settings	X	X
	Regional settings	X	X
	Performing physicians	X	X
	Operators	X	X
	Patient Comments	X	X

Item	Contains	In-room	Central
	Image comments	X	X
	Predefined texts	X	X
	Reject reasons	X	X
	Veterinary settings	X	X
	Mammo codes settings	X	X
Image Presentation Settings			
	Burn	X	O
	Square marker	X	O
	Transparent Shutters	X	X
	Font size	X	X
	Collimation Border Density	X	O
Export Destinations			
	Export Destinations	X	X
UI Configuration – General Settings			
	General Settings	X	X
	- Person Name Composition	X	X
	- Person Name Representation	X	X
	Image Overview Pane	X	X
	Current Patient Switch	X	X
	Configure External Applications	X	X
UI Configuration – Worklist Environment Settings			
	General settings	X	X
	Configure worklist	X	O
	Configure closed list	X	O
	Configure search pane	O	X
UI Configuration – Examination Environment Settings			

Item	Contains	In-room	Central
	General settings	X	X
	Configure XRG parameters	X	X
	Configure view patient pane	X	X
	Configure edit patient pane	X	X
	Configure view image detail pane	X	X
	Configure edit image detail pane	X	X
	Configure tools in examination	X	X
	Custom markers	X	X
UI Configuration – Viewing & Editing Environment Settings			
	General settings	X	X
	Configure normal mode & print mode	X	X
	Configure Tools & Annotations	X	X
	Show true scale factor (Print View)	X	X
Exam Tree Configuration			
	Complete exam tree /w all patient categories	X	O
	Add Image Pane configuration	X	O
	NX Emergency settings	X	O
	Exposure groups	X	O
	Protocol codes	X	O
	Print sheets	X	O
Security Configuration			
	General Settings:	X	X
	- Configure SSL settings	X	O
	- Configure audit log settings	X	X
X= imported; O = not imported			

Note: *Upon import of these items, already defined values will be overwritten.*

Importing exam tree settings from system with different X-ray device

1. If all settings must be imported, start by loading the configuration from file.
2. Delete the x-ray device.
   All modality settings are deleted from the exam tree.
3. Create a new x-ray device and configure the DR Detector(s).
4. Load a partial configuration from the configuration file, selecting the Exam Tree Configuration.

Depending on the version of the installed XRDI software, the imported data is merged with the new device configuration.

After the import, a dialog is displayed with feedback about the import process. If the X-ray modality is found to be incompatible with the imported data, a warning message is displayed that all modality settings are cleared.

Note: Alternatively the exam tree settings can be added using the **Add exams** link. The modality settings must be applied manually after the import.

Related Links

Loading a Configuration from File on page 25
Configuring an X-Ray Device on page 130

Saving a Configuration

Saves the current configuration as an external file.

Activating a Configuration

Note: For activating a configuration, a password is required. The password is available to your local Agfa representative and changed on a regular base.

To store the configuration settings in the Workspace to the NX database:

1. Click **File** > **Activate Configuration**.
2. Enter the password.

   The following window appears.

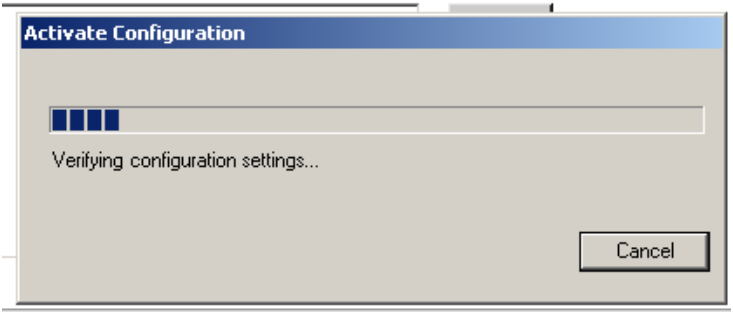


Figure 7: NX Service and Configuration Tool - Activate Configuration dialog box

Note: Changes made to the configuration must be documented in the history list. The key user is forced to comment changes for liability reasons.

If you activate a configuration, the current configuration is checked (verification).

Following dialog box, with the options listed below, may be shown when errors are detected.

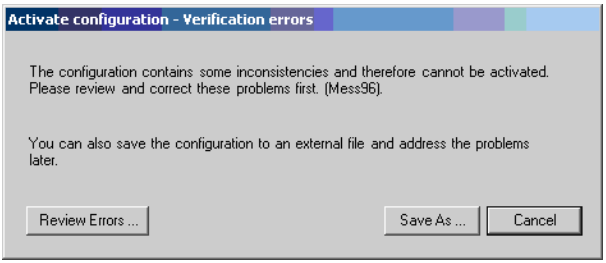


Figure 8: NX Service and Configuration Tool - Verification Errors dialog box

Review errors	Brings up all errors and warnings found during verification, The errors must be solved before activation will be possible.
Save as	Allows saving current work to file for later.
Cancel	Closes the verification dialog box

Verifying a Configuration

It is possible to verify a configuration without activating it. Click file – verify configuration. After the verification, the errors and warnings are shown.

Restoring a Previous Configuration

To restore a previous configuration of NX

1. Select **Restore Configuration**.

   The system lists all the available backups and asks the user to select the required backup:

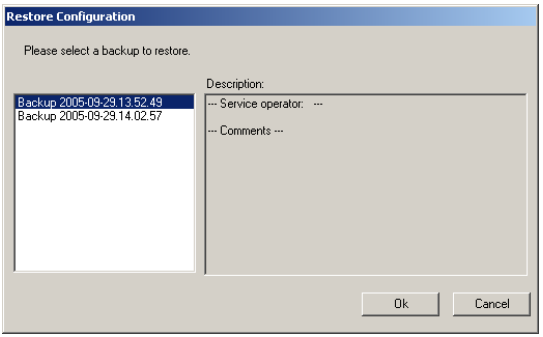


   Figure 9: NX Service and Configuration Tool - Restore Configuration dialog box

2. Select the backup to restore.
3. Consult the description of the backup file.
4. Click OK.

   The system creates a backup of the current set of configuration settings in the NX database.

Showing Configuration Messages

Shows the messages generated by the NX Service and Configuration Tool during the configuration activities.

The Workspace

All main activities in the NX Service and Configuration Tool are performed in the Workspace.

The Workspace is mainly introduced for the purpose of safety and to monitor the consistency of the configuration settings of the NX database. The Workspace creates a safe environment in which you can make any modifications to the configuration settings, test and verify them without affecting the actual configuration settings of NX.

General Configuration

Topics:

General Settings

Topics:

Site Settings

Topics:

Hospital Name, Hospital Address, Department Name

These site settings are included in the DICOM tags when sent to PACS, MPPS. They can be overruled by the values included in the DICOM modality worklist.

Hospital Name: (0008,0080)

Hospital Address: (0008,0081)

Department name: (0008,1040)

Performing Physician

The Performing physician names (0008,1050) entered here can be selected in edit patient screen when configured. The maximum number of physicians that can be entered is 50.

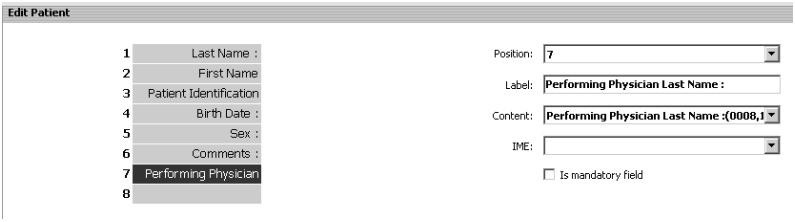


Figure 10: NX Service and Configuration Tool - Edit Patient pane

Related Links

Edit Patient on page 247

Operators

Pre-define a list of operators. The maximum number of operators that can be entered is 50.

The list will be used in NX when the 'Force operator identification…' flag is enabled (see "Identification"):

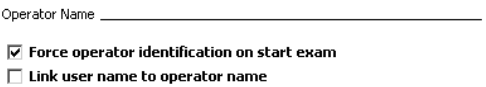


Figure 11: NX Service and Configuration Tool - Operator Name section

In this case, the operator has to identify himself by selecting an operator name the first time one wants to identify an exposure in a new exam in NX:

Figure 12: NX - Identify Operator dialog box

This list is also used in the “Select a Reject Reason” dialog box.

Related Links

Identification on page 52

Workstation Settings

Topics:

- *Workstation General Settings*
- *Workstation Fast Preview Settings*
- *Workstation Fast ID*
- *Workstation Storage Commit*
- *Workstation Musica Micro Calcification Enhancement Settings*

Workstation General Settings

Field	Description
ID station name	This name is used in the DICOM Digitizer CPF as the identification of the NX for fast ID functionality. Further, this attribute is also set in the station name (0008, 1010) in MPPS or RIS. This is not the station name (0008,1010) attribute used in the C-STORE commands. In C-STORE the station name is set to the Digitizer name.
Performed location	Only here for informational purposes, not used further
Processing station name	NX will write the Processing station name to the cassette. The DICOM Digitizer uses this to determine to which NX station it needs to send the image to. Must not be identical to the hostname of the PC. Fill in a dummy value when a twain Digitizer is connected (as this field is not used then).

Character set	Used for communication with DICOM RIS, MPPS and PACS systems. Not used when communicating with Digitizers. The NX Station will only send out characters which are defined in the selected character sets
Enable automatic cassette identification (also called 'auto-ID')	When enabled: on insertion of the cassette in the ID tablet or Digitizer, the cassette is automatically identified with the exposure settings selected at that moment in NX. The ID button in NX remains disabled in this setup. Except when the Examination screen is not in front in NX and a cassette is inserted, a dialog pops up telling the user to go to the examination screen. The user must manually press the ID button in that case (which is then enabled)!  **Figure 13: NX - Identify Cassette error dialog box** If the selected exposure has already been exposed, a copy of it is made when a cassette is inserted. To obtain this functionality with a Digitizer, the Fast ID flag must be enabled in the Digitizer setup and configured further. Otherwise auto-ID will not work. Also the Digitizer has to support this feature.
Performed station AE title	The AE title to be used for all SCU's of the NX station (MPPS, Archiving etc.) and for the storage SCP from the Digitizer (NX as SCP).
Show IP addresses (button)	Click the button to view the IP addresses (IPv4 or IPv6) of the NX on the local network, used to connect to DICOM digitizers, RIS, PACS, etc. The IP address is automatically detected at time of last start-up of the NX Workstation.

port	The port number for receiving the images from the Digitizer (NX as SCP).
Default modality	Modality type to be used as default setting for creating a new RIS device or configuring MPPS.

Related Links

CPF Generation on page 80
Workstation Fast ID on page 42

Workstation Fast Preview Settings

Settings only used with DICOM Digitizers (but still these fields need to be filled in for Twain Digitizers too).

Field	Description
AE title	The NX AE title for receiving fast preview images from Digitizer (NX as SCP)
Port number	The NX port number for receiving the fast preview images

Workstation Fast ID

(fast ID is sometimes also called 'direct ID')

Field	Description
Enable fast ID	To be enabled when no ID tablet is used. Identification happens on the Digitizer. Only supported with non-buffered Digitizers (DX-S, CR30, Solo). Mandatory with DX-S and CR30. Pressing the ID button (Identification) can be done before or after insertion of the cassette in the Digitizer. Fast ID needs also to be configured in the Digitizer.
AE title	The AE title on NX to which the Digitizer sends the fixed cassette info.(not needed for Twain Digitizer, fill in dummy value)
Port number	The AE title on NX to which the Digitizer sends the fixed cassette info. (Not needed for Twain Digitizer, fill in dummy value.)

Related Links

Digitizer Settings General on page 79

Workstation Storage Commit

Field	Description
Enable storage commit	With storage commit, the archive reports back to NX when the archive job is successfully archived. Archive storage commit AE title and port need to be configured in the archive settings. NX will open an association to request storage commit to the archive. The archive opens an association back to NX to confirm storage commit. This is the only DICOM scenario where an SCP (the archive) starts an association.
AE title	The AE Title for receiving the storage commit result message (NX as SCU).
Port number	Port number on which NX receives storage commit communication from archive.
Enable SSL	Whether the storage commit communication should be done securely (requires SSL certificates)

Related Links

Storage Commit on page 73

Workstation Musica Micro Calcification Enhancement Settings

Field	Description
AE title Port number	AE title and Port number for receiving processed images from the Micro Calcification Enhancement (MCE) Engine. In most situations the default values should not be changed.

Regional Settings

Topics:

Regional Settings General

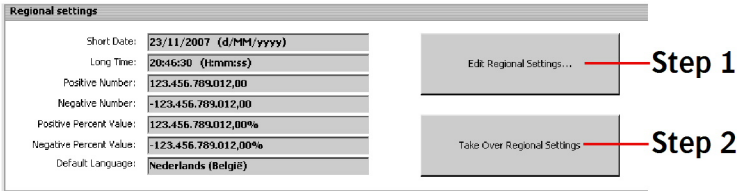


Figure 14: NX Service and Configuration Tool - Regional Settings

Allows changing some regional settings for nx.

These settings apply for all users using nx. they are user independent.

Most important settings are the date and time formats.

Set the default language to the language most likely to be used in the customer's environment.

- Step 1

Edit regional settings by clicking the 'edit regional settings' button. this brings up the windows regional and language options dialog.

To change the time and date format, click the additional settings button on windows 7 or the customize button on windows xp.

Pressing ok twice will save these settings in windows.

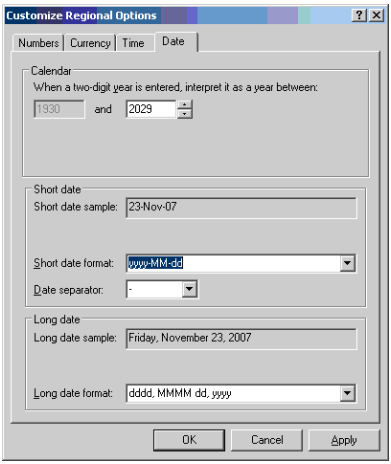


Figure 15: Windows - Regional Settings

- Step 2:

Pressing the 'Take over Regional settings' button in the NX Service and Configuration Tool will copy the settings (only those that are listed in the NX

Service and Configuration Tool – see screenshot above) to the NX database after activation.

Note: Any user can configure the Regional Settings in Windows and the NX Service and Configuration Tool. This is not restricted to certain user roles.

It is now guaranteed that the date and time formats of NX are the same as the date and time settings configured in the Windows Regional Settings. If, for example, “date” in Windows is formatted as “day/month/year” and this setting is taken over in NX, a possibly confusing date as 3/6/2007 cannot have a different meaning in Windows and NX.

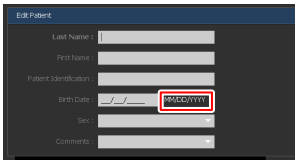


Figure 16: NX - Edit Patient pane

Note: Previous versions of NX required the “Change backend user locale” script to be run. From NX 3.0 on, this is not longer required.

Note: Above settings have no relation to the language(s) to be used in NX.

Regional Settings and CMS

Even on CMS, Regional Settings can be configured.

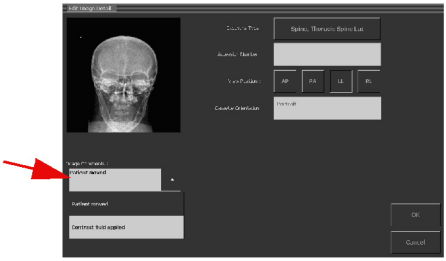
It is strongly advised to make sure all settings are the same in an NX cluster (several NX workstations connected to a CMS).

In an NX cluster, the CMS will issue a warning at startup when it detects that regional settings are conflicting.

“Conflicting regional settings detected. Please verify configuration of in-room station(s)…”

Predefined Lists

Patient comments	Patient comments can be edited here. They are used in the Edit Patient screen.  **Figure 17: NX - Patient Comments section** The visibility of patient comments also needs to be activated in the 'Edit Patient' setup screen.
Predefined texts	Predefined texts can be edited. They are used in the Editing screen.  **Figure 18: NX - Predefined texts** Each predefined text can have a different font size.
Image comments	Image comments can be edited The visibility of image comments also needs to be activated in the Edit Image Details setup screen.

	 **Figure 19: NX - Image Comments**
Custom Fields	Up to five custom editable fields can be configured to be added to the patient data or to the image data. The visibility of custom fields also needs to be activated in the Edit Patient setup screen or the Edit Image Details setup screen.

Related Links

Edit Image Details on page 250
Edit Patient on page 247

Custom Markers

It is possible to define custom markers here, apart from predefined fixed markers such as Left and Right

Note: Also refer to the image laterality item under Exposure Settings for General Radiology Examinations in the exam tree.

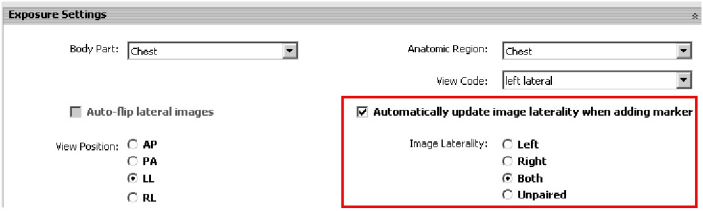
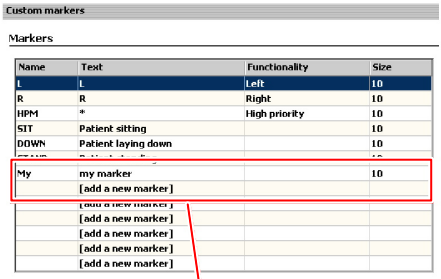


Figure 20: NX Service and Configuration Tool - Exposure Settings pane

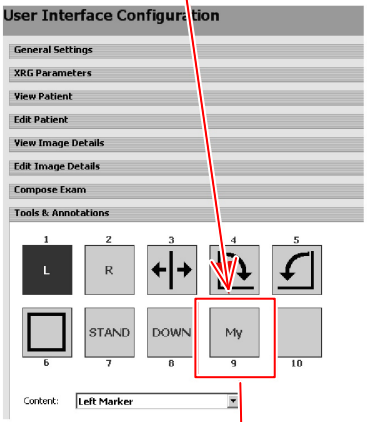
Another fixed marker is the High Priority Marker (HPM). It can be used to indicate to a radiologist that something of interest was seen on this image. Adding the high priority marker to an image will also increase the study priority ID to medium. This will assist your PACS system to identify these exams and handle them in an appropriate way.

After adding a new marker, its visibility must be configured in User Interface Configuration.

Step 1 :
Add a custom marker to the NX database.



Step 2:
Configure the NX User Interface for the marker.



Result:
The marker appears in NX.

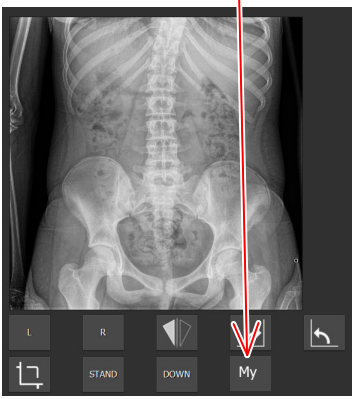


Figure 21: Adding Custom Markers - Overview

Related Links

Annotations Palette on page 260

Veterinary Settings

Species Name	Contains the value for DICOM attribute (0010,2201)
Breed Name	Contains the value for DICOM attribute (0010,2292)
Breed Registration Number	Contains the value for DICOM attribute (0010,2295)
Breed Registry Code Sequence	Contains the value for DICOM attribute (0010,2296)
Responsible Person	Contains the value for DICOM attribute (0010,2297)
Responsible Person Role	Contains the value for DICOM attribute (0010,2298)
Responsible Organization	Contains the value for DICOM attribute (0010,2299)
Patient's Sex Neutered	Contains the value for DICOM attribute (0010,2203)

These field scan be made visible and/or editable in the UI configuration.

Related Links

View Patient on page 246
Edit Patient on page 247

Mammo Codes Settings

It is possible to change the names (Eg. translate) of the View modifier values (0054, 0222) and Requested Procedure Reason values (0040, 100A).

These attributes can be made visible in the View/Edit image details pane.

Code	Specifies the code
Meaning	Specifies the default meaning of the code
Text	Contains the customizable text for the selected code. This is the text string that will be used to display the attribute in the View/Edit image details pane when made visible.
Revert	Resets the (customized) values of the “Text” attributes to the values of the “Meaning” attribute.

Related Links

View Image Details on page 249
Edit Image Details on page 250

Workflow Management

Topics:

Identification

Topics:

Identification General

Automatic selection of next exposure thumbnail	Defines whether the next exposure thumbnail in the NX image overview pane will be automatically selected after identification.  **Figure 22: NX - Automatic Selection of Next Image Thumbnail** When xrg license is enabled, this will not work.
Force operator identification on start exam	When enabled, the operator has to identify himself by selecting (or entering) an operator name the first time he wants to identify an exposure in a new exam in nx:  **Figure 23: nx - Identify Operator Dialog Box** and in the reject reason dialog:

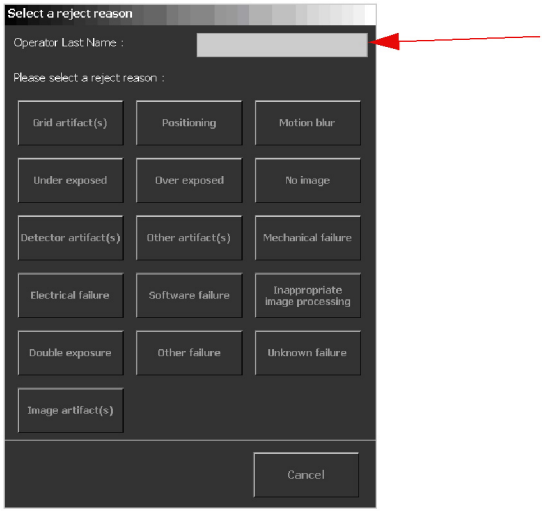


Figure 24: NX - Select Reject Reason Dialog box

An operator name can be typed-in or a pre-defined list of operators can be configured in General Configuration – Site Settings:

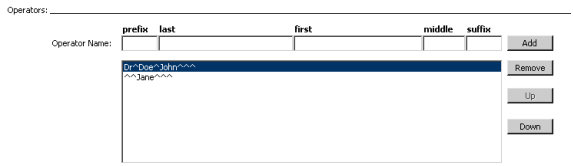


Figure 25: Nx Service and Configuration Tool - Operator List Section

The operator name (0008, 1070) is also used in audit logging.

Link user name to operator name	When enabled, the name of the user logged in (on Windows) is used as operator name (0008, 1070). This operator name is also used in audit logging.
Lock RIS patient demographics	Selecting this will prevent editing of patient data sent by the RIS. Manually created exams can still be edited. This prevents inconsistencies with the RIS system. This is the default IHE behavior.

	If MPPS is configured, editing of patient data will always be prevented on data, independent of this setting after first image arrival.
Lock patient demographics when archiving images	Selecting this will prevent editing of patient data, but only after the first image is sent to PACS. Applies to patient data coming from RIS and manually created exams. If MPPS is configured , editing of patient data will always be prevented on data, independent of this setting after first image arrival.
Days to keep exams on the system	Defines the maximum number of days a closed exam is stored within the history list. Don't set it any higher than really needed because it will impact system performance.
Store dose and RRAP statistics centrally	Enable this check box if you want to manage dose and RRAP (Repeat\Reject) statistics centrally (on CMS). The CMS will periodically collect these statistics from the in-room NX and buffer them. At that moment, the list with records on in-room is cleared. If you have selected this option, the main menu options **Export Repeat Reject statistics** and **Export Dose monitoring statistics** will be disabled on the in-room NX. Exporting these statistics must be done on CMS then.  **Figure 26: NX Main Menu - Import/Export section** On CMS this setting is indicated for every connected in-room NX in the scan result dialog:

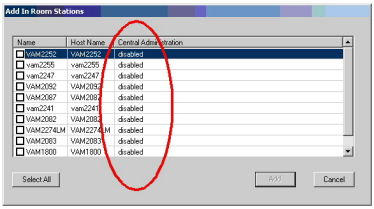
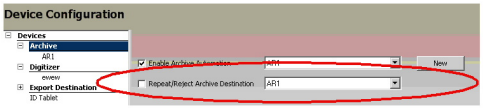


Figure 27: NX Service and Configuration Tool - Add In Room Stations

It is advised to set this the same for all in-room NX workstations connected to CMS.

Reject Archive	Defines the reject archive. The reject archive stores rejected images. Needs to be setup in the archive main pane:  **Figure 28: NX Service and Configuration Tool - Reject Archive**
RRAP Maxlength	Maximum number of RRAP (Repeat\Reject) records that will be kept on this NX. This field is not editable (just shown for information). When this maximum number is reached, the oldest records will be removed from the database (FIFO). When the user exports the Repeat\Reject statistics to file (see Main Menu of NX), all records are removed from the NX database.  **Figure 29: NX Main Menu - Import/Export section** In daily situations, this maximum is never reached on the in-room when these statistics are kept centrally as

	the CMS collects them periodically. However be aware that the CMS has a similar maximum!
Request a reject reason Predefined reject reasons	Activation/deactivation of the request for reject reason. A dialog with these reasons is presented when an image is rejected on NX.  **Figure 30: NX - Select Reject Reason dialog box** The list of reject reasons can be configured here.
Enable the **Create DR Sequence** button	Defines whether the **Create DR Sequence** button is visible in the NX **Add Image** pane.

Related Links

Configuring Main RIS Settings on page 111
Storage on page 56

Storage

NX checks for cleanup of closed exams every hour.

Exams older than the configured number of days are removed (along with their corresponding images).

Note: Manually re-opening an exam will reset the date of the exam! So it will be cleaned-up later.

Following exams are not cleaned up (yet):

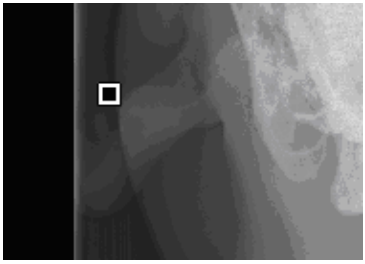
- Exams which are more recent than 1 day.
- Exams for which archiving or printing failed.
- Exams which are waiting in the DICOM export buffer to be written to CD \DVD (see export automation under “Configuring Export Destinations”).

Note: *When there is less than 6Gbyte (100Gbyte on systems that support dynamic imaging) of free disk space on the image partition (D:), then the oldest exams are cleaned up (even when they are more recent than the ‘days to keep…’ setting).*

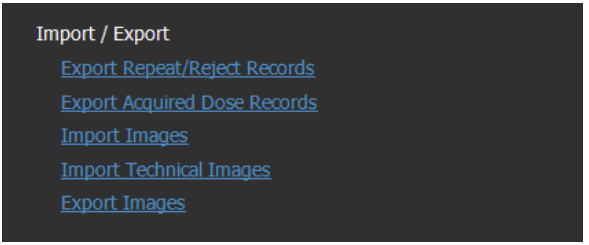
Related Links

DICOM Export on page 83

Image Presentation

Enable burn	When enabled: each new received image is displayed 'burned'. *Note: In burned images, the pixels that fall outside of the Window (Cfr. Window \Level) are rendered in black or white (depending on which side of the Window they are).*
Enable ERMF	When enabled: ERMF can be used for new received images: • Mammo Magnification factor will be used for measurements and true size calculations (when available) • DR FLFS images are ERMF calibrated (when the patient to grid distance is available) • ERMF calibration button will become available, if it is configured in Annotations Palette and if the SID is known.
Enable FDA multiframe time representation	The fluoroscopy irradiation time of the fluo timer and in the status box will be displayed in minutes and tenths of minutes.
Show Square Marker	When enabled, the square marker is positioned on the image when it arrives on NX. The square marker will be rotated with the image and will trigger the operator or radiologist. Not for mammo images.  **Figure 31: NX Show Square Marker dialog box**

<table>
<tr><td>Transparent Shutters</td><td>When enabled: the shutters are transparent (otherwise shutters are black).</td></tr>
<tr><td>Display mammo images in split screen</td><td>Defines whether mammo images should be displayed in split screen view by default.
 
Note: the setting is configured on the in-room NX Workstation. The CMS behaves according to the setting on the selected in-room NX Workstation.</td></tr>
<tr><td>Free text Font size</td><td>Set font size for free text annotations.</td></tr>
<tr><td>Collimation border density</td><td>Value between 0 (lowest density= transparent) and 100 (highest density=black).
Auto collimation and the auto display of a black border are configurable per exposure type in the exam tree.
If the density is set to 100, collimation borders are transparent. The check box Use non transparent borders for density 100 for Musica 2 and Musica 3 makes collimation borders non transparent.
For system that support dynamic imaging, two extra density fields are available, applied as follows:
<table>
<tr><td></td><td>Fluo sequence</td><td>Rapid sequence</td></tr>
<tr><td>Collimation border density</td><td></td><td>replay</td></tr>
<tr><td>Fluo capturing Collimation border density</td><td>capturing</td><td>capturing</td></tr>
<tr><td>Fluo replay Collimation border density</td><td>replay</td><td></td></tr>
</table></td></tr>
<tr><td>Use non transparant borders for density 100 for Musica 2/3</td><td>Collimation borders for Musica 2 and Musica 3 image processing remain transparant, even for density 100. This option forces non transparant collimation borders.</td></tr>
</table>

Default DR FLFS Stitching Mode	The selected stitch mode will be used as default for all DR FLFS exams. In the Stitching pane on the NX workstation, the user can switch to the other mode or manually adjust the DR Full Leg Full Spine image.
Show dose deviation	Show/hide dose deviation bar in examination environment.
Max # of records	Maximum number of dose records that will be kept on this NX. This field is not editable (just shown for information). When this maximum number is reached, the oldest records will be removed from the database (FIFO). When the user exports the dose statistics to file (see Main Menu of NX), all records are removed from the NX database.  **Figure 32: NX Main Menu - Import/Export section** In daily situations, this maximum is never reached on the in-room when these statistics are kept centrally as the CMS collects them periodically. However be aware that the CMS has a similar maximum!
Musica 2 and Musica 3 Taste settings	These fields are used to configure the taste setting belonging to Musica 2 and Musica 3 packages. 'Taste' means the combination of contrast, brightness, sharpness and processing version. One has the option to change the taste per package. From then on, this taste is applied to all exposures in that package. Some packages are listed twice, with 'T2' added on the second item. This allows for applying the same package in different exam types with different taste settings. The 'Store' button just puts the value in the table.

Musica MCE Density	Intensity of the Musica Micro enhancement of the calcifications.

Related Links

Musica 2 and Musica 3 on page 175

Emergency Procedure

Here you can configure the settings that NX has to load in a new emergency exam.

Emergency mode	What will be set in the emergency exam.
Empty	Nothing, the new emergency exam created will not have any preconfigured value.
Patient	The configured patient name and ID. NX will add date and time to the name and ID to guarantee uniqueness.
Exposures	The configured Exam or exposure group. This might save a few mouse clicks for the operator when starting an emergency exam on NX.
All	All: The configured patient name, ID and exam or exposure.

Examtree Routing

Enable Examtree Routing	When enabled: patient weight (or any other numeric demographic data) is used to assign a patient one of four age-based pediatric categories or the adult category.
Routing Attribute	The demographic data value that is used for assigning a category.
Label	Use a custom label when the value is displayed on the NX application.
Category	Fixed categories.
Display Name	Presentation of the categories to the user and in the Exam Tree Configuration.
Boundary value	The Routing Attribute value is evaluated agains the Boundary values to decide which category is applied.

Related Links

Patient Categories on page 155

Configuring the Devices Connected to NX

Topics:

Configuring Archives

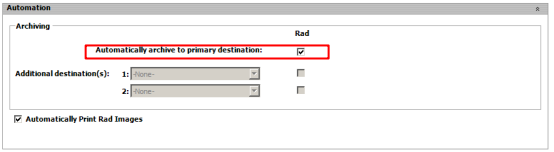
Note: If no automatic archiving, printing or exporting is configured, unrecoverable image loss can happen if an exam is closed before the images are archived, printed or exported, because it may be automatically deleted by the automatic clean up.

Topics:

Configuring the List of Archives

Topics:

Configuring General

Enable archive automation	If enabled, the configured archive is used to send images to after the **Close And Send** or **Send Image** buttons in NX are pressed. If not enabled, no automatic archiving will be done on 'Close and Send'. It is then still possible to archive an image manually by pressing the 'Send Image' button on NX. This setting can be overruled. Per exposure, archive automation can be disabled.  **Figure 33: NX Service and Configuration Tool - Processing & Routing / Automation pane**
Repeat Reject Archive Destination	If enabled, the configured destination will be used as the reject archive destination for rejected images.

Adding a New Archive

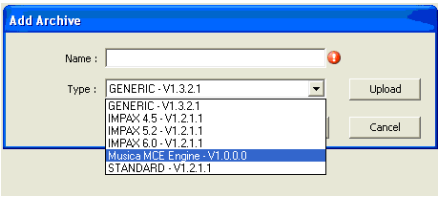


Figure 34: NX Service and Configuration Tool - Add Archive dialog box

Press the New button to add a new archive.

- Name: Fill in an nickname for this archive.
- Type: The type field allows you select an archive model. These models contain predefined parameters. After loading, these parameters can be changed per archive.

If the requested archive model is not available on the system, a generic archive model must be selected. The version number (E.g. V1.2.1.0) is just the version number of the model itself.

The Upload button allows you to add a new model or update an existing model. Browse to a proper archive xml file. The model will be added to the NX database for later usage.

If NX is configured to perform Micro Calcification Enhancement (MCE) on mammography images, the images are first sent to a special archive of the type “MCE Engine”. The MCE Engine archive destination does not store the images, but performs the MCE image processing jobs. The processed images are sent back to the NX. Then both the original image and the processed image are submitted for storage on a PACS archive that accepts MCE images.

Configuring Dose Reporting

NX can create Dose Structured Reports containing information about estimated patient radiation exposure resulting from imaging procedures. The reports can be sent to the archive or to a dedicated Dose Info Reporter or Dose Info Consumer.

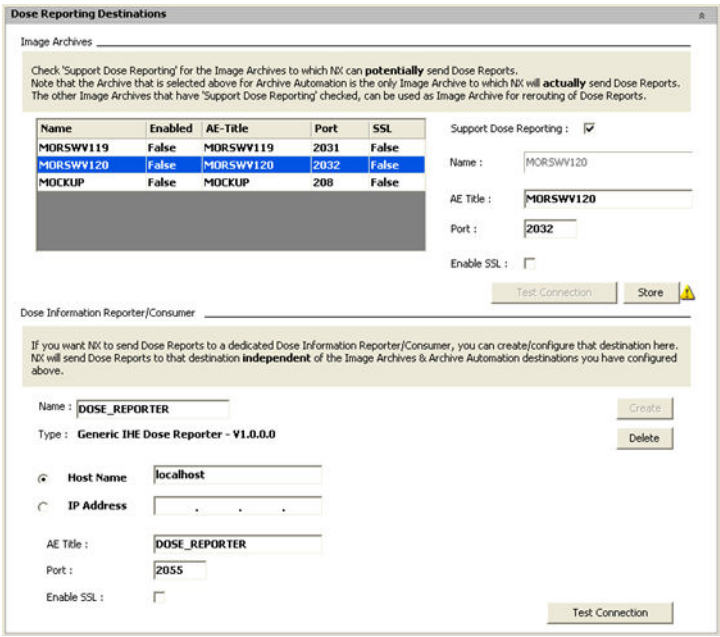


Figure 35: Dose Reporting Destinations

Topics:

To configure for sending dose reports to the archive

Select each archive and configure these settings:

Support Dose Reporting	Check **Support Dose Reporting** for the archives to which NX can potentially send dose reports.
AE Title Port Enable SSL	Modify the device settings if the settings for receiving dose reports are different from the settings for receiving images. Click **Test Connection** to check if the device can be connected (this is not a test to check if the device can receive dose reports).

On 'Close and Send', dose reports are sent to the archive that has Archive Automation enabled and that supports Dose Reporting. The dose reports are processed as separate entries in the archive queue.

If the archive queue is rerouted, the rerouted archive will receive the dose reports, if it is configured to support Dose Reporting.

To configure for sending dose reports to a Dose Information Reporter/ Consumer

Click **Create** and configure these settings:

Name	Nickname for the Dose Information Reporter/ Consumer device
Host Name IP Address IP Stack AE Title Port Enable SSL	Enter the device settings. Fill in either hostname and IP Stack or IP address (IP Stack detected automatically). Click **Test Connection** to check if the device can be connected (this is not a test to check if the device can receive dose reports).

On 'Close and Send', dose reports are sent to the configured Dose Information Reporter/Consumer. The dose reports are processed in a separate archive queue.

Modifying Archive Properties

Topics:

- *Advanced Settings*
- *Storage Commit*

Device Settings

Type	The selected model (type)
Hostname IP address IP Stack	Fill in either hostname and IP Stack or IP address (IP Stack detected automatically).
AE title	DICOM AE title of the archive device for C-STORE (can be in lower case)
DICOM port	Port number of the archive device for the C-STORE DICOM Store and storage commit can have different port numbers!
Enable SSL	Enable secure DICOM for the C-STORE request, requires SSL Certificates!
Is Archive	if enabled, images sent to this destination will be referenced in the MPPS messages
SOP class	SOP class to be used Combinations of multiple values are possible to allow different output types for GenRad and Mammo images (on mixed user systems): • CR For Presentation & MG For Presentation • DX For Presentation & MG For Presentation • DX For Processing & MG For Processing
GSPS supported	When enabled: the GSPS will be sent together with the image. Otherwise annotations are burned in the image.
Output type	Contents of the list depends on selected SOP class and 'GSPS supported' flag. When using Musica 2 or Musica 3 image processing (Musica 2 or Musica 3 license is active), it is strongly advised to configure for using P-values!

	Sending Musica 2 or Musica 3-processed images as OD-rel data to the archive will cause insufficient image quality : • background showing contouring and artifacts. • bones having too little contrast. • skin lines too strong and a Halo around the skin line. In case configuring P-values is not possible: see “Advanced Settings” .
Transfer syntax	• STANDARD: Standard uncompressed encoding • JPEG_LLNH1: JPEG Lossless, Non-Hierarchical (DICOM value= 1.2.840.10008.1.2.4.57) See also further. • JPEG_LNNHF: (in fact, should be ‘JPEG_LLNHF’ instead): JPEG Lossless, Non-Hierarchical, First-Order Prediction: (Process 14, [Selection Value 1]) (DICOM value =1.2.840.10008.1.2.4.70) and is the default for JPeg lossless. 'non-hierarchical encoding' is a JPEG operation mode that does not allow a progressive coding, because hierarchical encoding works with multiple frames, while non-hierarchical encoding doesn't. It is not to be confused with JPEG2000. • JPEG_LOSSY:
Photometric interpretation	Monochrome 2 can for example be applied to fix inverted polarity bug when printing from Impax pre 5.2.2 SU1
Accepts Musica MCE Calcification Enhancement Images	When enabled: MCE processed copies of mammography images are sent to this archive.

Advanced Settings

Grayscale correction

Selection of the grayscale correction LUT to be applied. It can be used to correct common system grayscale configuration errors.

- only selectable when the output type is a OD type and the Musica 2 or Musica 3 license is enabled.
- when the output types changes to p-values then this item will change to “no correction”.

Note: *The advanced settings only become editable from model Generic 1.3.0.0 or Standard 1.2.0.0.*

Upload a new version of the model if needed (from the folder C:\agfa \healtcare\nx\bin\DICOMArchiveDeviceModels)

No correction	No correction
Predefined	Correction 1: Grey = 40 E.g. To correct situation where IMPAX monitor set on "NEMA", NX monitor calibrated for gamma 2.20 Correction 2: Grey = 60 E.g. To correct situation where IMPAX monitor set on "Gamma 2.20", NX monitor calibrated for P-Values
Custom	More customized grayscale corrections can be applied here. The custom setting allows to set a value for black, grey and White.

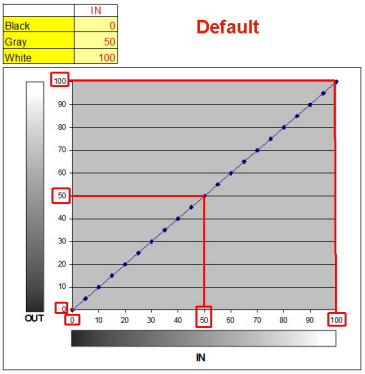


Figure 36: Default 0 - 50 - 100 = no correction

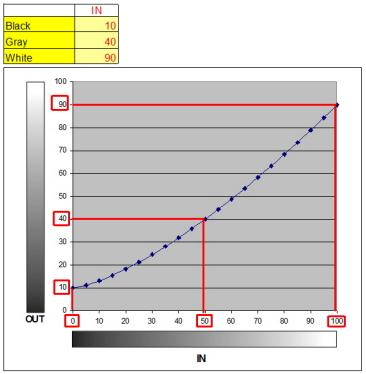


Figure 37: Customized

Resolution

Resolution	Resolution of the image when sent to archive. The Image will be scaled to the number of pixels defined. This setting is not available if GSPS is enabled. This setting is only available for 'GENERIC' archive model version 1.3.0.0 and higher! Upload a new version of the model if needed (from the folder C:\agfa \healtcare\nx\bin\DICOMArchiveDeviceModels)

	 *Note: Diagnostic image quality may be lost if the resolution configuration causes downscaling of the image.*

Same SOP UID for Presentation and for Processing images	According to DICOM, the SOP instance UID of the raw (“for processing”) image and the processed ("for presentation") image must be different. However in some situations where the raw image is also sent to a CAD station, the PACS has problems linking the report coming from the CAD station to the original image. Therefore, enabling this setting might help the PACs to link the CAD report to the correct image.

Storage Commit

With storage commit, the archive reports back to NX when the archive job is successfully archived.

Setup Storage commit here. Also configure Storage commit in plus in General Configuration.

Time out	Time out on storage commit
Storage commit	Enable or disable storage commit
Enable SSL	Enable secure DICOM for the storage commit communication, requires SSL Certificates!
Hostname IP address IP Stack	Fill in either hostname and IP Stack or IP address (IP Stack detected automatically).
AE title	The AE title to which the storage commit request message is sent
DICOM port	DICOM port to which the storage commit request message is sent

Related Links

Workstation Storage Commit on page 43

Configuring Digitizers

Topics:

Introduction

Two types of Digitizers exist: DICOM and Twain Digitizers. The difference is based on the way how they connect to NX.

Topics:

DICOM Digitizers

DICOM Digitizers are connected via the network and use the DICOM protocol to communicate with NX. Examples of DICOM Digitizers are SOLO, COMPACT, COMPACT PLUS, CR-25, CR-75, CR 85-X, CR 35-X, …

Twain Digitizers

Twain Digitizers are connected via a single firewire interface to the NX. Examples of Twain Digitizers are DX-S and CR30.

Connecting Multiple Digitizers

In NX, it is not possible to connect (and configure) Digitizers of a different type.

Several DICOM Digitizers can be connected together.

Only one Twain Digitizer can be connected.

Following table gives an overview of possible combinations:

Combining digitizers on one NX	DICOM Digitizer	CR30	DX-S	DX-G
DICOM Digitizer	x	-	-	-
CR30	-	-	-	-
DX-S	-	-	-	-
DX-G (Twain)	-	-	-	-

Consequences of Digitizer Selection

The configuration of a Digitizer might have consequences on the behavior of the rest of the NX Service and Configuration Tool (and NX).

In case of configuration of CR1B Digitizers (CR75/25…), following features are not available or will give verification errors during activation:

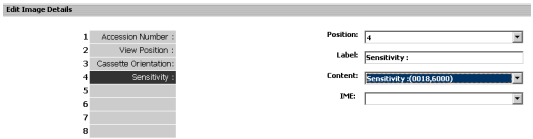
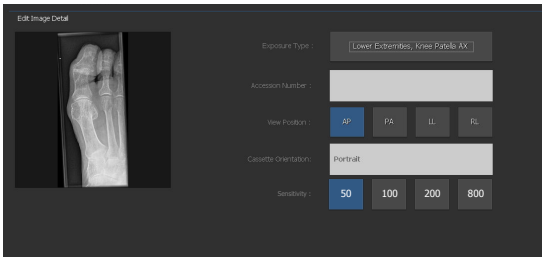
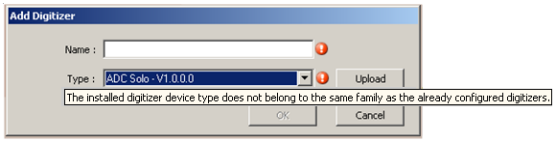
- No "MammoT2" packages selectable (other special mammo packages are selectable though (Magnification spot, …).
- Taste settings will have value 0.
- No Musica Micro Calcification Enhancement (MCE) available.

The interactive Musica dialog box in NX will always be unavailable to the regular user for Mammo images (but available for service user).

LGM versus Exposure Index Systems

Refer to the User Manual for more information on LGM versus Exposure Index Systems.

Configuring Digitizers System Wide

Allowed speed class	You can select up to 4 speed classes (= scanning sensitivity). These speed classes can then be selected by the operator in the Edit Exposure pane of NX (when its visibility is configured in UI Configuration: add 'Sensitivity' attribute).  **Figure 38: NX Service and Configuration Tool - Allowed Speed Class**  **Figure 39: NX - Sensitivity Selection**
New button	To create\add a Digitizer device. Depending on the already configured Digitizer, a warning symbol is shown next to the Type field. When hovering over it, a clear message is given why a certain selection is not possible.  **Figure 40: NX Service and Configuration Tool - Add Digitizer dialog box**
Upgrade Model button	To upgrade existing Digitizer settings

When for an existing digitizer the 'Upgr. Model' button becomes enabled this means that a new version of the model is available in "c:\agfa\healthcare\NX\bin".

Figure 41: NX Service and Configuration Tool - Upgr. Model button available

Clicking the 'Upgr. Model' button will load the new version of the model in the NX database and upgrade the current Digitizer to these settings.

Related Links

Connecting Multiple Digitizers on page 75

Configuring the CR Image Recovery Exposure Type

Define the settings to apply when a CR image is received that cannot be linked to a listed exposure. A patient category, examination group and Exposure type will have to be defined.

To configure the CR image recovery exposure type

1. Go to the Recovery Procedure pane in the Digitizer Device Configuration screen.

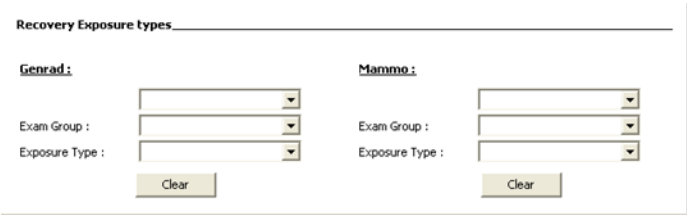


Figure 42: Recovery Exposure types

2. Define a patient category, examination group and Exposure type for Genrad and for Mammo images.

Digitizer Settings

Topics:

Digitizer Settings General

Name	Nickname for this Digitizer
Type	The type
Enable Fast ID (or direct ID)	Fast ID must be enabled when no ID tablet is used. Identification happens then on the Digitizer. Fast ID is mandatory for DX-S, CR 10-X, CR 12-X, CR 15-X and CR 30-X(m). Fast ID is optional for CR 25 and CR 35. Fast ID is not possible for CR 75 and CR 85 (as these are buffered Digitizers). Fast ID also needs to be configured in General Configuration – Workstation settings.
Enable Auto Cropping	Turns on or off automatic cropping of the non-relevant image area. Only available for CR 10, CR 12-X and CR 15-X.
Genrad Scan Resolution	Default value for the scan resolution of all images except FLFS. Only available for CR 12-X and CR 15-X. The user can select another scan resolution before identifying the cassette if the scan resolution attribute is configured. The default value will be marked with '*' in the scan resolution field.
FLFS Scan Resolution	Default value for the scan resolution of FLFS images. Only available for CR 12-X and CR 15-X.

Related Links

Workstation Fast ID on page 42
Edit Image Details on page 250

Digitizer Device Settings

Only for DICOM Digitizers.

Hostname IP address IP Stack	Fill in either hostname and IP Stack or IP address (IP Stack detected automatically).
AE title	DICOM AE title

CPF Generation

Only for DICOM Digitizers.

NX must be configured on the DICOM Digitizer. The Digitizer is configured via a cpf-file. It is possible to append the NX parameters to the Digitizer's CPF file. This way it is no longer needed to use the CCM tool.

Default router	Default router on the network, this setting will be written in the CPF file
Subnet mask	Subnet mask of the network, this setting will be written in the CPF file
Modify CPF button	Will load the Digitizer's CPF file and append local NX parameters to it. Uploads the cpf file back to the Digitizer. After this, it is still required to activate the new cpf file on the Digitizer through the standard service procedure.
Create CPF button	Will create a new cpf file for the Digitizer with local NX parameters filled-in. Uploads the cpf file back to the Digitizer. After this, it is still required to activate the new cpf file on the Digitizer through the standard service procedure.

Following parameters are collected from the NX configuration to be set in the cpf file:

NX setting	To be configured in
ID station name	General Configuration – Workstation settings.
Processing station name	General Configuration – Workstation settings.
Hostname of NX	Digitizer device settings.
Performed station AE title	General Configuration – Workstation settings.
Port	General Configuration – Workstation settings.

Default router	Digitizer device settings.
Subnet mask	Digitizer device settings.
Fast Preview AE title	General Configuration – Workstation settings.
Fast ID AE title	General Configuration – Workstation settings.

Related Links

Workstation General Settings on page 40
Digitizer Settings on page 79

Emergency Procedure

Note: *Assigning a wrong examination settings in case of an emergency patient may lead to insufficient image quality.*

Define the settings to apply when emergency images are received (e.g. as result of pressing an emergency button on the Digitizer).

A patient category, examination group and Exposure type will have to be defined for each Emergency button.

Exam group	Just a reference to the emergency button on the Digitizer, this field must not be edited.
Exam	Just a reference to the emergency button on the Digitizer, this field must not be edited.
Category	Configure the patient category.
Exam group	Configure the exam group.
Exposure type	Configure the exposure type.

Configuring Export Destinations

Note: *If no automatic archiving, printing or exporting is configured, unrecoverable image loss can happen if an exam is closed before the images are archived, printed or exported, because it may be automatically deleted by the automatic clean up.*

Topics:

- *Modifying the Properties of DICOM Export Destinations*

Configuring System Wide Export Destination Settings

In this page, you can configure the **Export Images** functionalities.

In NX, **Export Images** can be found in the Main Menu window:

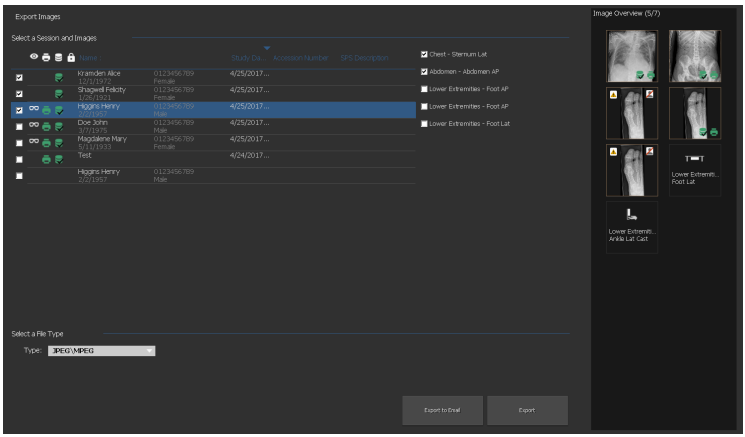


Figure 43: NX - Export Destinations

Three types of exports exist:

- DICOM Export
- JPEG Export
- Native Export

Note: 'Export to native NX format' is only available for service (when logged in with an account that has service rights).

Topics:

DICOM Export

DICOM export in NX is only possible to CD\DVD.

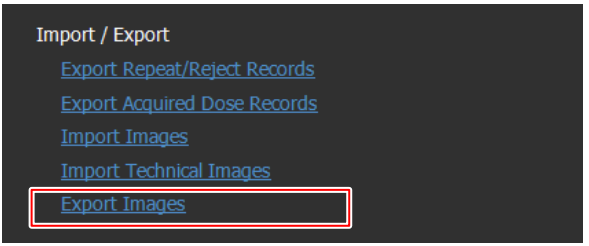
It is not possible to import the DICOM images again in NX.

The images can be viewed with any DICOM-compliant viewer. Optionally a Viewer can be written on the disk with the exported image data. This can be established with the **Include DICOM viewer** checkbox.

The CD/DVD can serve as a “referral CD\DVD”, an electronic version of the patient handout. The private practitioner might also want to use this as a personal archive.

It is possible to select one or more images from an exam or several exams to export. A rejected image can also be exported.

Since the DICOM export is standardized, it is NX version independent.

Enable export automation	When enabled, all images of all exams will be automated for DICOM export after closing. All data is copied in an export automation buffer. Export to CD\DVD can be started by clicking following link in the Main Menu window of NX:  **Figure 44: NX Main Menu - Import/Export section** the nx automatic cleanup process (which runs every hour) does not remove exams that are waiting to be exported in the export automation buffer. only after this buffer is emptied, by burning cd/dvds, the exams will be marked for cleanup again. in the worklist, an automation icon is shown.  **CAUTION:** if the export automation buffer is full, no new exams will be added. they may be deleted by the automatic clean up after some time. this can cause unrecoverable image loss. Empty the buffer in time, by performing the export to cd/dvd. export the exams manually, that were not exported automatically after the buffer ran full.
sopclass	select the proper sop class for exporting. it is possible to select more than one sop class.
include dicom viewer	when enabled, the sigmaview dicom viewer will be written to the cd\dvd together with the exported images.

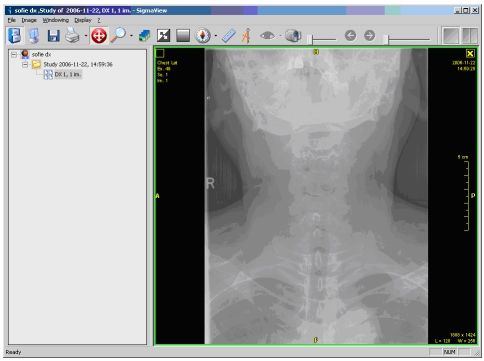


Figure 45: dicom viewer

Include patient demographics	When disabled, the export will be anonymous. If export automation is enabled, this option is not available and patient demographics are always included in the exported image.
GSPS supported	When enabled: the GSPS will be exported together with the image.
Output type	Output type to be used when exporting. Possible output types are dependent of the selected SOP class.
Buffer size	Defines the size of the export automation buffer. I.e. the size of the buffer that is available for storing images before they are burned on CD/DVD.

Note: *The DICOM export is IHE compliant only if the user or the RIS has provided a value for the Patient ID field.*

Related Links

Storage on page 56

JPEG Export

JPEG export in NX is possible to a folder only.

To be used for e.g. didactical purposes in a slide show or a scientific paper. JPEG images are certainly not to be used for diagnostic purposes.

It is not possible to import the JPEG images again in NX.

It is possible to select one or more images from an exam to export. A rejected image can also be exported.

There is no viewer exported together with the images (as for DICOM export).

Used compression scheme: Lossy encoded, as is used in Transfer syntax: JPEG Baseline, Lossy encoded (UID 1.2.840.10008.1.2.4.50).

Include patient info in filename	When enabled: the filename contains the patient name and patient ID. When disabled: the export is anonymous.

Native Export

This functionality is provided for service only.

Native export in NX is possible to a local folder or CD\DVD.

The exported images can be imported back to NX, with the following constraints:

- NX-specific exam semantics are lost. An imported exam structure is created when the images are imported, with defaults for missing exam information. Some functionality will be disabled for imported exams.
- The used exposure type name will be shown, but the original exam tree is not exported along with it.
- There is no guarantee that images can be imported back on a different version of NX.
- Archive, print automation and MPPS at 'close exam' is completely disabled on these imported exams. Closing an imported exam has no further consequences.
- The clean up date of the exam is set to the time of import. This way, it will be treated in a similar way as a newly created exam by the clean up mechanism.

It is possible to select one or more images from an exam to export. A rejected image can also be exported.

There is no viewer exported together with the images (as for DICOM export).

Include patient demographics	When enabled: the export contains the patient demographics data. When disabled: the export is anonymous.

Modifying the Properties of DICOM Export Destinations

Topics:

General

The list of created DICOM export destinations is listed in the NX Main Menu window:

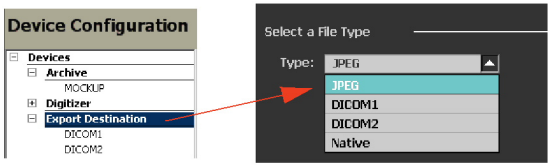
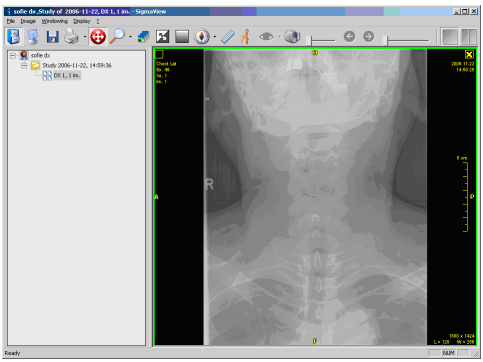
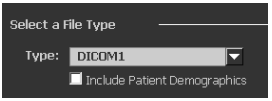


Figure 46: DICOM Export Destinations

name	nickname for this export destination. will be shown in nx (see above).
sopclass	select the proper sop class for exporting. it is possible to select more than one sop class.
include dicom viewer	when enabled, the sigmaview dicom viewer will be written to the cd\dvd together with the exported images.  **Figure 47: dicom viewer**

Include patient demographics	Default setting for the "Include Patient Demographics" checkbox in the NX export pane. So in NX it will still be possible to enable or disable this:  **Figure 48: NX - Include Patient Demographics check box** When disabled, the export will be anonymous.
GSPS supported	When enabled : the GSPS will be exported together with the image
Output type	Output type to be used when exporting Possible output types are dependent of the selected SOP class.

DICOM Export Overview

Overview of the DICOM Export SOPClasses.

	DICOM Export for presentation	**DICOM Export for processing**
SOPClass	**[CR for presentation]** **[DX for presentation]** **[MG for presentation]**	**[DX for processing]** **[MG for processing]**
Image (RAW) + Musica processing + W/L + collimation	Processed pixels + LUTs	RAW pixels only
Annotations	GSPS or Burned In	Ignored
Measurements		
Shutters		
Zoom	GSPS or ignored	
Markers	Always burned in	

	DICOM Export for presentation	DICOM Export for processing
SOPClass	**[CR for presentation]** **[DX for presentation]** **[MG for presentation]**	**[DX for processing]** **[MG for processing]**
Exam related data	Ignored	
Bitmap shutter (for background darkening	GSPS or ignored	Ignored

Exporting via CMS

When exporting on CMS, the export configuration of the CMS itself will be used! The CMS pushes its configuration to the in-room NX.

The actual export to CD/DVD or folder (for JPEG) happens on the CMS itself.

It is also possible to select exams of different NX workstations on CMS.

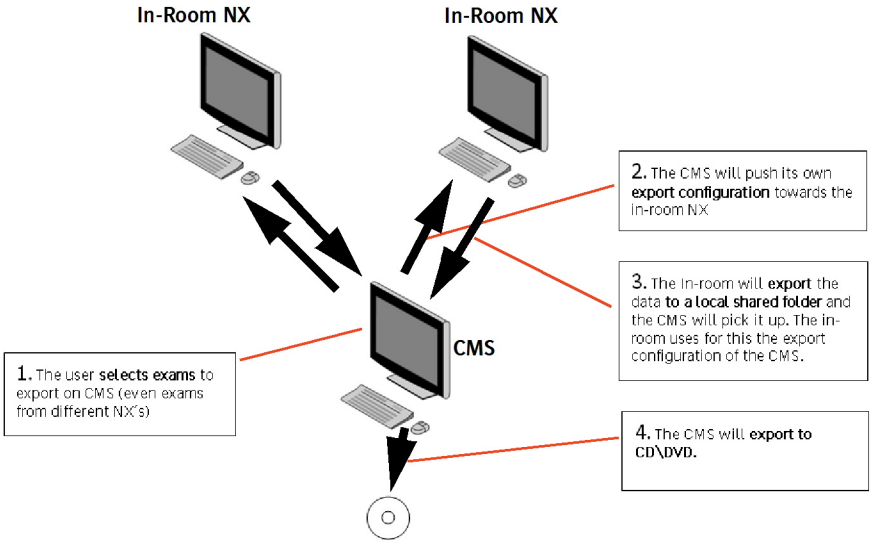


Figure 49: Exporting via CMS - Overview

Viewing DICOM Export

The DICOM Export CD/DVD contains software to view the exported images. Minimum PC requirements to use the viewing software are:

- CPU: 1GHz Pentium-4
- RAM: 512 Mb
- Display: resolution of 1024 by 768 pixels (32 bits)
- Operating System: Windows 7 Business (32 bit) SP1, Windows 8, Windows 8.1, Windows 10

Configuring ID Tablet

Topics:

Configuring ID Tablet System Wide

Only one ID tablet can be created.

Only one ID tablet model (type) is available.

Note: 'Automatic cassette identification' needs to be configured in General Configuration – configure workstation settings:

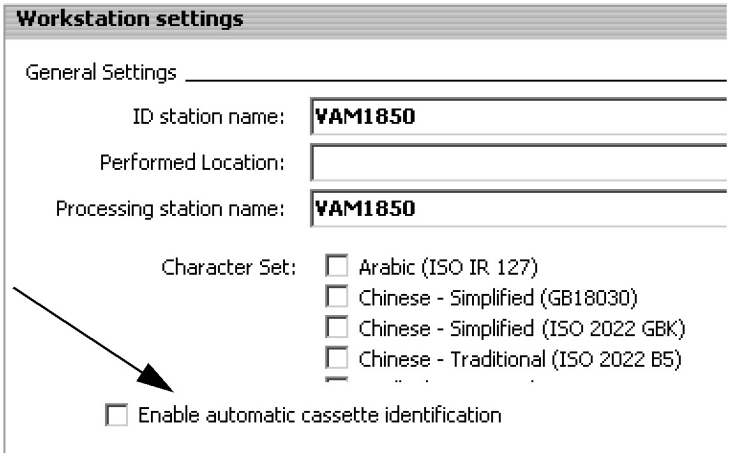


Figure 50: NX Service and Configuration Tool - Workstation Settings

With **Automatic cassette identification**, the identification is automatically started on insertion of the cassette in the ID tablet. The settings of the exposure, which is selected at that moment in NX, are used.

Configuring Properties of ID Tablet

Only one ID Tablet can be configured.

Configuring Monitors

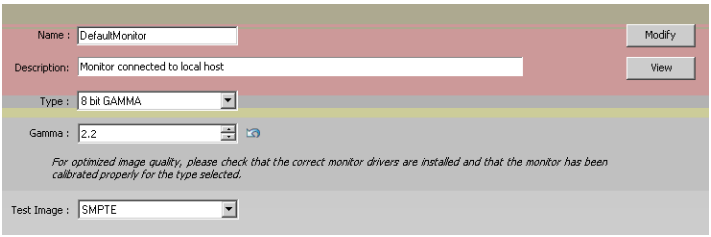
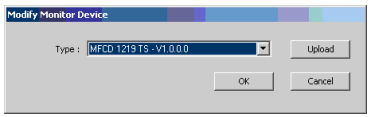


Figure 51: NX Service and Configuration Tool - Configuring Monitors

Setup the attached monitor. Some pre-defined monitor types exist. A type also contains the screen resolution in horizontal and vertical number of pixels. During startup of NX, the resolution of the configured type is compared to the actual value in Windows. If there is a mismatch, a message will be displayed and you'll need to correct it.

Further, the type also contains pixel spacing values for optimal font display on higher resolution monitors.

Name	Nickname for this monitor
Description	Description
Type	The configured type
Gamma	Gamma setup
Test image	Select a test image. This image will be shown when clicking the View button.
Modify button	Allows to change the type  **Figure 52: NX Service and Configuration Tool - Modify Monitor dialog box.** More pre-defined types can be uploaded via the Upload button.
View button	Shows the selected test image on the screen

Configuring Printers

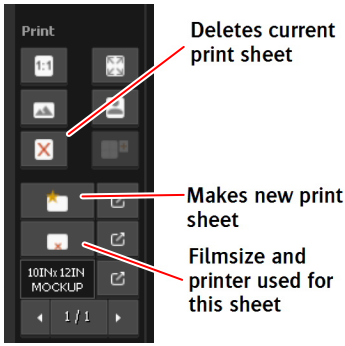
Note: If no automatic archiving, printing or exporting is configured, unrecoverable image loss can happen if an exam is closed before the images are archived, printed or exported, because it may be automatically deleted by the automatic clean up.

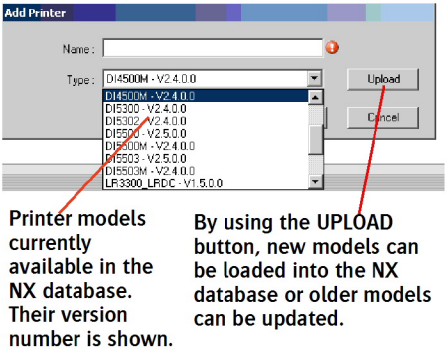
Topics:

Configuring System Wide Printing

Topics:

Printing Main Settings

Enable printer automation	If enabled, all images of an exam will be submitted for DICOM print after the Close And Send button in NX is pressed. Printer automation can be disabled for specific exposures.
Default printer profile	Printer to be used in NX when a new print sheet is made:  **Figure 53: NX - Printer Profile Selection**
Default film size	Film size of default printer to be used in NX when a new print sheet is made (see above)
New button	To create a new printer on NX, enter a nickname and select a type.

	 **Figure 54: NX Service and Configuration Tool - Add Printer dialog box** The version number (e.g. V2.5.00) is just the version number of the type itself.
Delete all button	Removes all configured printers.
Restore button	Re-sets the image and sheet text box settings back to factory values.

Related Links

Automation on page 178

Printer Models

Printers are configured in NX Service and Configuration Tool starting from printer models.

A printer model contains predefined settings as:

- supported film sizes\types
- Dmin\Dmax
- Interpolation settings
- …

These printer models are available on NX in two places:

- the NX database
- as xml files in c:\agfa\healthcare\NX\bin\DICOMPrinterModels folder

  More than 60 different xml files are released. Each xml file lists the settings of one model.

  Each model has a version number.

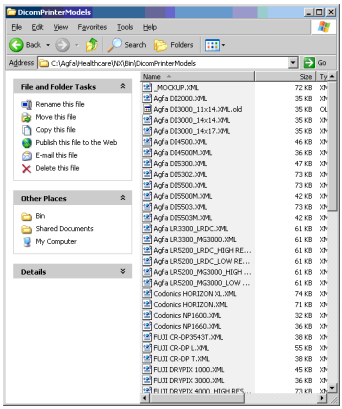


Figure 55: Load xml-file with printer model

The models that are available in the NX database are listed when creating a new printer model:

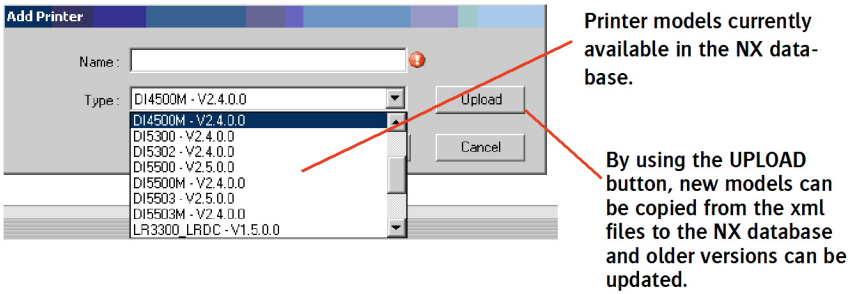


Figure 56: NX Service and Configuration Tool - Add Printer dialog box

from factory, only the 'agfa' printer models are available in the nx database. their content is equal to the content of the agfa * xml files.

the version number (e.g. v2.5.0.0) is just the version number of the type itself.

use the upload button to:

- add a non-agfa printer model to the nx database.
- update a printer model in the nx database with a newer version.

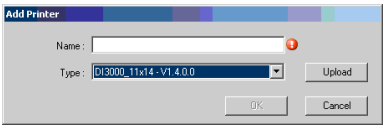


Figure 57: nx service and configuration tool - add printer

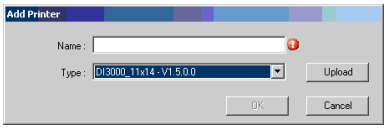


Figure 58: NX Service and Configuration Tool - Add Printer

Existing printer profiles are not modified with an upload. You can always use the 'Upgr. Model' button

An upload cannot be undone.

Of course, it is always possible to change the printer settings in the profile

Xml Printer model files can be used on all versions of NX and are available to the service organization.

Upgrade Existing Printer Settings

When for an existing printer the 'Upgr. Model' button becomes enabled; this means that a new version of the model is available in c:\agfa\healthcare\NX \bin\DICOMPrinterModels.

Clicking it will load the new version of the model in the NX database and upgrade current printer to these settings.

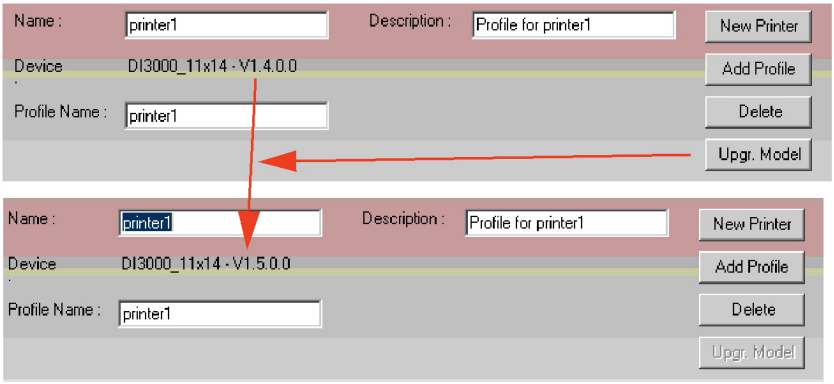


Figure 59: NX Service and Configuration Tool - Upgrade Printer settings

Print Sheet and Layout

This area provides the easiest way to configure printing on the system, you simply link a cassette size to a film size and a configured printer. Any exceptions to this general rule can be configured in examination Tree Configuration > Printer Configuration.

Cassette & film size	Link a cassette to a film size. When you also link a film size to a printer profile (see further), automatic printing becomes possible when a cassette of a certain size is identified. These settings are only used for exposure types of which the FilmSize setting is set to DEFAULT:

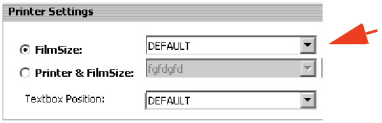


Figure 60: NX Service and Configuration Tool - Printer Settings - Cassette and Film Size

For exposure groups this setting is not used.

Note: 'Sheet size' is the same as 'film size'.

Film & profile size	Link a film size to a printer. These settings are also used for all exposure types for which the FilmSize is set to a specific value:

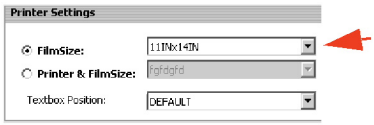


Figure 61: NX Service and Configuration Tool - Printer Settings - Film and Profile Size

For exposure groups:

This setting is also used to determine the printer for exposure groups that have no specific printer defined (but DEFAULT).

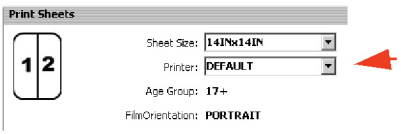


Figure 62: NX Service and Configuration Tool - Printer Settings - Print Sheets

Related Links

Printer Settings on page 180

Sheet Text Box & Image Text Box

Possibility to configure the text box of the complete print sheet (=sheet text box) and the text box of a single image (=image text box).

A text box is composed out of different cells and rows.

The attributes that can be configured for an image text box are a sub-set of the attributes that can be configured for a sheet text box. Therefore, notice the difference of the text cell editor:

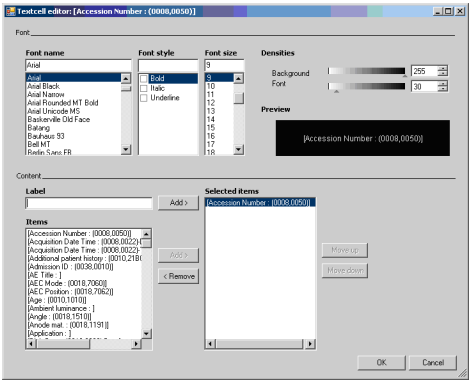


Figure 63: NX Service and Configuration Tool - Text Cell Editor for the Sheet Text box.

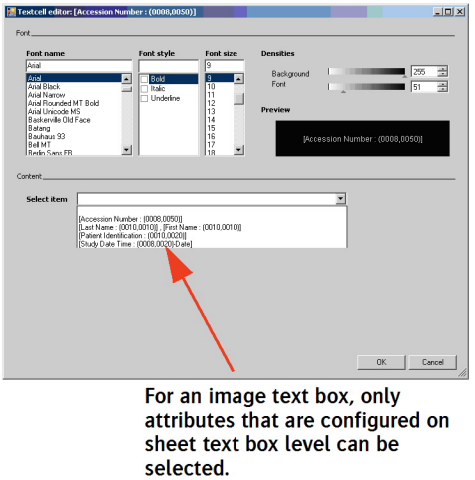


Figure 64: NX Service and Configuration Tool - Text Cell Editor for the Image Text box.

At run-time, NX applies some logic on the rendering of these textboxes. This means that some attributes may not be shown even when configured. The rules are:

- a 1/1 layout only has a sheet text box never an image box
- on other than 1/1 layouts you can have both, but
- an image text box is only shown when it contains image related attributes (e.g. acquisition date \ time), otherwise the image text box is not shown.

- if both sheet and image text box are to be shown, then sheet text box attributes that are already in the image text box are not shown.

Further:

Sheet text boxes on a 1/1 layout are shown in the image for true size and outside the image for best fit.

Note: *Sheet textbox positioning can be overruled per exposure type in the exam tree set-up (but only for 1/1 layouts).*

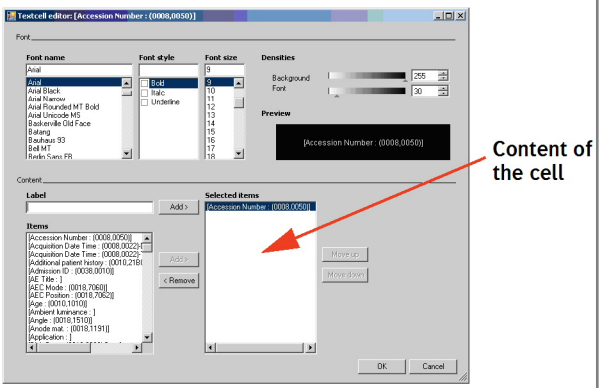
All these settings can be tested (printed out) from within the NX Service and Configuration Tool by using the 'Test profile' button in the printer set-up screen!

Reset the sheet and image text box settings by using the 'Restore…' button.

Cell Types

When clicking on a cell, the cell type is indicated in:

Figure 65: NX Service and Configuration Tool - Cell Types

Text	Possibility to add: • plain text (fill in Label field) • attributes (which will be resolved at run time: their actual value will be filled in)  **Figure 66: NX Service and Configuration Tool - Cell Types - Content of the cell**
Scale	True size indicator (or % scaled)

Dose bar	Graphical representation of the dose value (LGM or EI) relative to the dose reference value for this exposure.
Bitmap	Only possible on a sheet text box. Select a fixed bitmap or PATIENT_PHOTO.BMP. Selecting PATIENT_PHOTO.BMP allows you on NX to add a patient photo:  **Figure 67: NX - Patient Photo selection** When selecting a bitmap in an offline NX Service and Configuration Tool make sure to copy the bitmap file also to the online NX.

Configuring Bitmap Files Offline

When configuring bitmaps to be printed on film in an offline NX Service and Configuration Tool, you should also manually copy over the bitmap file to the online NX system, in the following directory:

C:\Agfa\Healthcare\NX\Configuration\BitmapFiles (or you can always do the copying again through on the online system).

On an offline NX Service and Configuration Tool system the bitmap file is copied to C:\Agfa\Healthcare\NX\Offline.Config.Tool.x.x.xxxx\Bin\DataFiles\Configuration\BitmapFiles

While on an online system this directory is:

C:\Agfa\Healthcare\NX\Configuration\BitmapFiles

Modifying the Properties of Existing Printers (Changing Printer Profiles)

Topics:

Main Settings

Name	Name of the physical printer, only used in the NX Service and Configuration Tool. Used for all profiles for this printer. Changing it, will change it for all profiles for this printer.
Device	The model and version.
Profile name	Enter a nickname for this printer profile. This name will be used in NX.
Description	Description.
New printer	Makes a new printer (profile). Profile name = printer name.
Add profile	Makes a new profile for this physical printer. So makes a copy of current printer settings in a new printer profile.
Delete	Deletes current printer profile
'Upgrade Model' button	When this button becomes enabled, a new version of the model is available in c:\agfa\healthcare\NX\bin\DICOMPrinterModels. Clicking it will load the new version of the model in the NX database and upgrade current printer profile to these settings.

Related Links

Printer Models on page 96

Device Settings

Hostname IP address IP Stack	Fill in either hostname and IP Stack or IP address (IP Stack detected automatically).
DICOM port	The network port the printer SCP is listening on.
Enable SSL	Secure printing, requires SSL set-up (certificates) on both sides.
Priority	The priority of the DICOM print jobs sent to this printer

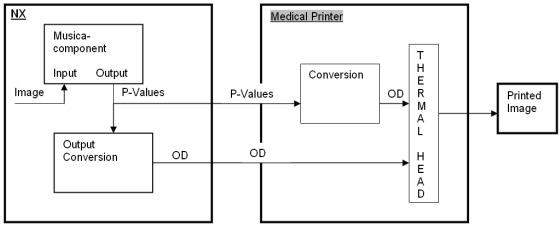
Use N-Events	When enabled, NX waits for N-Events from the printer reporting back to NX the status of print jobs. A print job will be marked as DONE only when the print sheet is available in the output bin. When disabled, NX considers a job printed when it left the print queue of NX and is spooled by the printer. When 'film session printing' is enabled, the N-events will represent the status of the whole FS (with possible multiple sheets). Otherwise, the N-Events represent the status of 1 print sheet.
AE-title	The DICOM AE-title of the printer's SCP.
Film sizes	Lists the available film sizes as defined in the model, possible to uncheck some. The film size is shown in the list as soon as it is supported by a medium type.
Test connection	Ping, checks the IP address. Followed by a DICOM ping (Verification SOP class), which checks the AE-title and port.

Image Sheet Settings

Background density	The density of the area not occupied by the image in the image cell.
Border density	The density of the border of the print sheet and of empty image cells.
Ruler	Whether or not a ruler should be printed on film.
View box illumination	For Musica: leave this value at default For Musica 2 or Musica 3: Enter the luminance of the light box in cd/m². It has to be measured with a light meter. You can also set the value of 2000. See also Pixel format in "Advanced Settings"
Reflected ambient light	For Musica: leave this value at default. For Musica 2 or Musica 3: Enter the diffuse reflection luminance of the viewing area in cd/m², measured with a light meter. You can also set the value of 1.

Test profile	Allows to print a test sheet from the NX Service and Configuration Tool.

Advanced Settings

Magnification type	Defines the interpolation used when images need to be scaled. This is done on NX and not on the printer as NX makes a complete sheet bitmap for the printer using the complete printable area of the printer. Next to this, NX sends MAGNIFICATION NONE to avoid the printer from interpolating. If the printer doesn't support this, REPLICATE is sent. The preferred value for Musica 2 and Musica 3 is BICUBIC BELL hi res.
Smoothing factor	Smoothing factor belonging to the magnification type. The preferred value for Musica 2 and Musica 3 is 0.9.
Configuration info	Printer Device specific Configuration Info. The preferred value for Musica 2 and Musica 3 is Perception_LUT linear.
Pixel format	Combination of the pixel type (P-values or OD) and the number of bits. The preferred value for Musica 2 and Musica 3 is 12bit pvalue. Background info: Using p-values will achieve a consistent greyscale perception of the images, independent of the viewing media, like diagnostic softcopy monitors, referral workstation monitors, hardcopy film, and this in different light conditions.  **Figure 68: NX Service and Configuration Tool - Pixel Format**

	1. In case an image in P-Value format is transmitted, there will be negotiation for PLUTs. When the SCP supports PLUTs, NX will sent 'PLUT Shape', having the value 'IDENTITY'. So, no Look Up Table (PLUT Table) will be sent, only the string 'IDENTITY'. The printer will perform the conversion from P-Values to OD image format. Illumination (2010,015E) and Reflected Ambient Light (2010,0160) are used to recover Optical Density information from P-Values. But since these values (view box settings) have already been optimized/manipulated in Musica, the default values should be used. **2.** In case of an image in OD format, there will be no negotiation for PLUTs and no PLUT will be sent. The **DICOM Configuration Info** field, filled in by the user, has to contain the perception LUT to be applied by the printer on the image. The applicable settings depend on the printer-type and are for Agfa printers: linear (default), kanamori, kanamorilike (75.220). The view box settings have no meaning here - no PLUT values are used.
Film session printing	Enabled: NX will send all sheets of an exam in one DICOM film session (FS) to the printer (if they all are to be sent to the same printer), with the print command (N-Action) on FS level. This guarantees that all films of one exam are laid off in the same printer bin. Disabled: NX will send all sheets in different DICOM film sessions (FS) to the printer (one film box (FB) per FS).
Film destination	(2000,0040) 'Bin' allows to specify a bin number further.
Film destination bin no.	BIN no to be used when film destination = BIN.

Medium Settings

Medium type	Medium type to be used by this printer profile.

Min density	Minimum density for this printer profile. Value between 0 and 4.
Max density	Maximum density for this printer profile. Value between 0 and 4.

Configuring Priors

This section describes what should be configured in the NX station to be able to access the Viewing Priors interface.

The precise configuration depends on the version of IMPAX (or WEB1000) that is installed.

- URL WEB1000 R4.1& R5.x:

  http://<server>/agfa/QueryForStudies.jhtml?propertiesfile=QueryForStudiesNX&whereclause=

  Authentication does not require a Domain Name.
- URL IMPAX 6.2:

  AgfaImpaxBridge://C:\Program Files\Agfa\AgfaImpaxBridge\BridgeRemote.exe/QueryForStudies?configfile=bridge_settingsNX.xml

  Authentication requires a Domain Name.
- URL IMPAX Results Viewer:
  - Using https protocol: AgfaImpaxResultsViewer://<server>/ResultsViewer/emr.aspx?
  - Using http protocol: AgfaImpaxResultsViewerNonSecure://<server>/ResultsViewer/emr.aspx?

    Authentication requires a Domain Name.
- URL IMPAX Data Center (Xero):
  - Using https protocol: AgfaXero://<server>/?theme=<theme>&
  - Using http protocol: AgfaXeroNonSecure://<server>/?theme=<theme>&

    Authentication does not require a Domain Name.

  The theme parameter in the URL is optional (to compose an URL without theme parameter, remove everything after the question mark). Two themes are available:
  - theme=epicEpr
  - theme=impax

  The default theme is epicEpr.
- URL Impax SE Web Client:
  - Using https protocol: AgfaImpaxSE://C:\Program Files\Agfa HealthCare\SE Web Client\SigmaRemote.exe/<server>
  - Using http protocol: AgfaImpaxSENonSecure://C:\Program Files\Agfa HealthCare\SE Web Client\SigmaRemote.exe/<server>

    Authentication does not require a Domain Name.

Note: *The name of the IP address (<server>), the User name and the password are defined by the IMPAX configuration.*

Note: *The first time Viewing Priors is used, some dialogs will pop up to configure the communication to the WEB1000 (e.g. Java install, certificates,...). These dialogs can be confirmed. This will happen for each different user!*

Note: *If a Domain Name is required, this should be configured as part of the user name, which is then of the format <username>@<domainname>.*

Consult the service documentation of the Prior Viewing providers for further details on:

- Not all filters (Study Date, Study Status, Modality and Body Part) are supported by all Prior Viewing providers.
- Required Security Settings (e.g. Internet Explorer settings, Certificates, ...) may differ depending on the Prior Viewing provider.
- Additional software may need to be installed depending on the Prior Viewing provider.

Configuring RIS

Topics:

Configuring System wide RIS settings

Procedure:

In the Device overview pane, click **RIS**.

The main form for configuring RIS will appear.

Topics:

Adding a New RIS

With the **New** button, a new RIS device can be created.

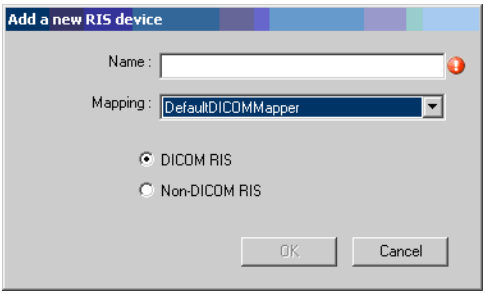


Figure 69: NX Service and Configuration Tool - Add new RIS device

Procedure:

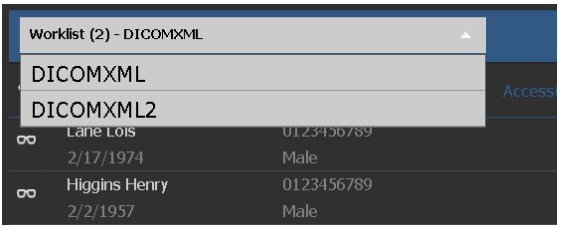
1. Click the **New** button.
2. Fill in a nickname for this RIS.
3. Select a pre-defined mapping.
4. Select whether it concerns a DICOM or a non-DICOM RIS.

Related Links

RIS Mapping on page 117

Configuring Main RIS Settings

Initial RIS device	Defines the default RIS device of the system. More than one RIS device may be configured. The 'initial RIS' defines the RIS which will be used on startup of NX.

	At runtime you can switch between different RIS systems in the worklist screen:  **Figure 70: NX - Initial RIS Device** Upon selecting the RIS, a query is automatically done.
Use Japanese protocol code guideline JJ1017	To be enabled for Japanese protocol codes. I.e. an extra sequence (0040,0440) is used in Scheduled protocol code sequence (0040,0008). Also, for automatic exposure selection, it is not enough to map to 0040,0008 'Protocol code value'. Two extra attributes must be used, separated by slashes, see JJ1017 guidelines.
Use non-DICOM protocol codes	When this function is enabled, protocol codes longer than 16 characters are accepted. When disabled, NX Service and Configuration Tool checks on maximum size of 16 characters. A protocol code longer than 16 characters is never sent to the archive (independent of the setting of this flag). Excel files (used to generate protocol code xml files) also accept more than 16 characters.

Related Links

Japanese Protocol Codes on page 127
Automatic Selection of Exposure, Exam or Exposure group on page 125

Modifying the Properties of Individual RIS

Procedure:

Select a RIS from the tree view.

Related Links

RIS Mapping on page 117

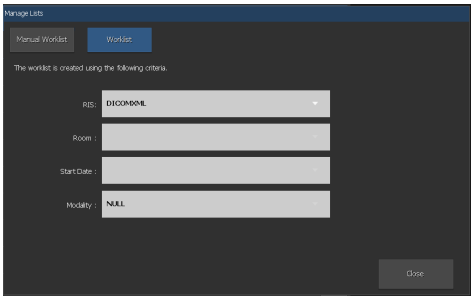
Topics:

Main Settings

- Name

Nickname for this RIS device

- Query Type (only for DICOM RIS)

Broad	Default mode. In this mode, the fields SPS Start Date, modality and Default Scheduled Station AE-Title are used in the query to the RIS. It is possible to change them at run time in NX in the Manage Lists window in the Worklist of NX:  **Figure 71: NX - Manage Lists**
accession number	in this mode, the user must enter an accession number in the worklist window of nx which is used in the query. In this mode, the fields SPS start date, modality and Default scheduled station AE-Title are NOT used in the query to the RIS.

Connection Type Settings for DICOM RIS

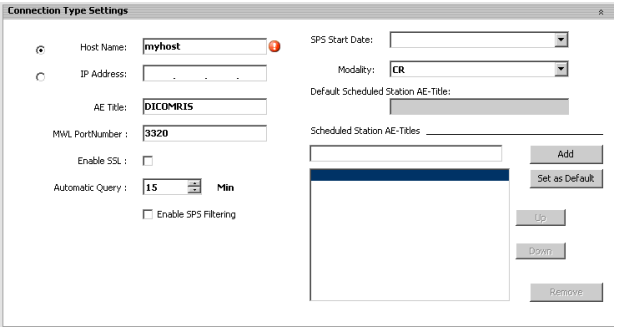
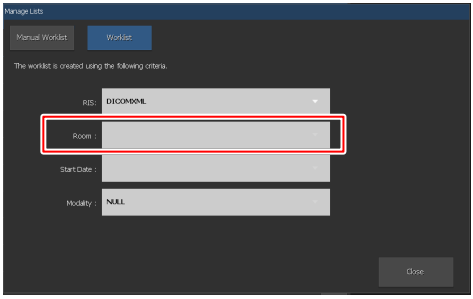


Figure 72: NX Service and Configuration Tool - Connection Type Settings pane

Hostname IP address IP Stack	Fill in either hostname and IP Stack or IP address (IP Stack detected automatically).
AE title	DICOM AE title of the DICOM RIS
MWL port number	Port number of the DICOM RIS
Enable SSL	Enable secure DICOM (SSL Certificates required)
Automatic query	Interval in minutes NX should query RIS 0 means: no automatic query
Enable SPS filtering this filtering only works with a DICOM RIS which sends a value for studyuid, for a non-DICOM RIS no SPS can be filtered away.	When this flag is enabled, NX checks - during receipt of new worklist items from the DICOM RIS after a query - whether a 'started' or 'completed' SPS exists already on NX. If it already exists, then the received SPS is NOT added again to the NX worklist (filtered away). This can help to keep the worklist short if it is not kept up to date on the RIS side. When this flag is disabled (default behavior), the system will not check if the SPS already exists on NX. This could result in adding the same SPS to the worklist more than once.

	E.g. you could have two entries in the worklist with name 'John Doe', one with an 'eye' icon in front and one without this icon. Checking on SPS equality is done by comparing 6 fields of two SPS' (patientname, sex, birthdate, patientid, spsid, studyuid).
SPS start date	(0040,0002) The default value for the SPS start date in the Modality Worklist (MWL) query. Can be left empty.
Modality	(0008,0060) The default value for the modality type in the MWL query. Can be left empty.
Default scheduled station AE-Title	(0040,0001) The scheduled AE title to be used during the MWL query. Can be left empty.
Scheduled station AE titles	(0040,0001) The list of possible scheduled AE titles. This makes it possible to select stations in the Manage Lists screen in NX.  **Figure 73: NX Scheduled station AE-titles**

Connection Type Settings for non-DICOM RIS

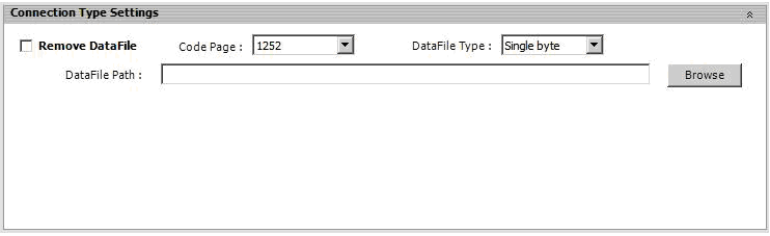


Figure 74: Connection Type Settings pane (non-DICOM)

Depending on the RIS type, these settings can be configured:

Remove Datafile	Enable this to remove the data file after each query. It is recommended to enable this option, to make the latest RIS data available in NX.
Code Page	ASCII code page to be used
DataFile Type	Select **Single byte** for ASCII file or **Multi byte** for XML file
DataFile Path	File name and path of the data file
Parameter File Path	File used to convert the delimited worklist
Automatic Query	Time interval in minutes between the queries
User Program Path	File name and path of the user program to be executed

MPPS Destination Settings

Only applicable to DICOM RIS

Send out MPPS	Enabling or disabling sending of MPPS. If MPPS is enabled, editing of patient data in NX will be prevented independent of the 'Lock patient demographics' settings made in the Workflow management. (In fact, editing is still allowed here until the first image arrives).

Hostname IP address IP Stack	Fill in either hostname and IP Stack or IP address (IP Stack detected automatically).
AE Title	AE title of the MPPS destination
Port number	Port number of the MPPS destination
Enable SSL	Enable secure DICOM
Modality	CR, DX, MG or RF Value to be used in the MPPS

RIS Mapping

WARNING:
Information from the RIS can be lost because of wrong mapping of incoming SPS attributes to the internal NX data structure.

The purpose of RIS mapping in NX is:

- Filling-in of patient and exam data from RIS in the correct NX data structures (= obtained through mapping)
- Automatic exposure (or exam or exposure group) selection in NX starting from protocol codes coming from the RIS

RIS mapping is required for DICOM and non-DICOM RIS.

Related Links

Automatic Selection of Exposure, Exam or Exposure group on page 125

Topics:

Basic Mapping

Purpose: correctly map the RIS data structures to NX data structures so that at run-time of NX the patient and exam data from RIS are correctly received.

During creation of the RIS device in the NX Service and Configuration Tool, you had to select a pre-defined mapping in this dialog:

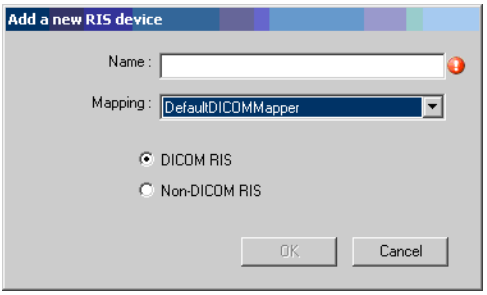


Figure 75: NX Service and Configuration Tool - Add Ris dialog box

The following steps explain how to change the mapping for this RIS device.

Go to the 'mapped fields'\'unmapped fields' sections in the RIS setup page to change the mapping.

- "The Mapped Fields Section"
- "Fields"
- "Buttons"
- "The Unmapped Fields Section"
- "Available Default Mappings"

Topics:

The Mapped Fields Section

This section defines the mapping.

On the left you will see the RIS fields, at the right the internal NX fields. One row represents one mapping.

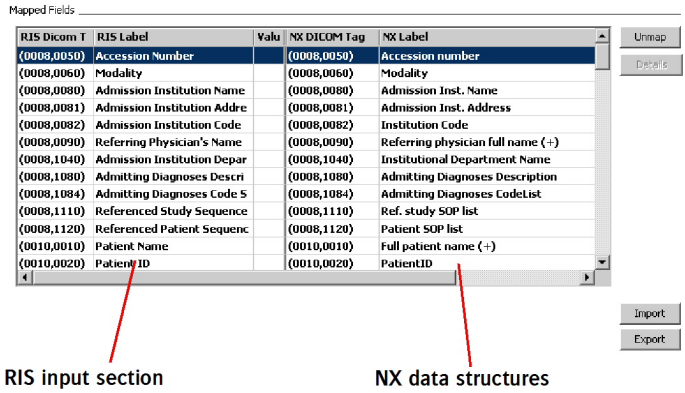


Figure 76: NX Service and Configuration Tool - RIS mapping

Fields

- Simple fields

  It is possible to map a simple RIS field on a simple NX field.

  For example: patient ID

Figure 77: 20121129 - RIS mapping

- Sequences

  Some fields in these tables refer to sequences. They are typically indicated by the word 'sequence' or 'list' at the end.

  It is possible to map a sequence to an NX sequence

  For example:

Figure 78: NX Service and Configuration Tool - RIS mapping

It is also possible to map a single field to a sub-field of the 'protocol code' sequence.

For example:

Figure 79: NX Service and Configuration Tool - RIS mapping

In this case, do NOT also map the sequence itself as the results are unpredictable.

The sub fields of a sequence have the same NX DICOM tag as the sequence itself. E.g.

0040,0008	Scheduled protocol code sequence
0040,0008	protocol code value
0040,0008	protocol code scheme designator
0040,0008	protocol code scheme version
0040,0008	protocol code meaning

This is the sequence

These are the subfields of the sequence

- Person Names

  For person names, there is a field for the whole name and there are fields for the sub-parts of the name.

  For example, the whole name:

Figure 80: NX Service and Configuration Tool - RIS mapping

For example, the sub-fields:

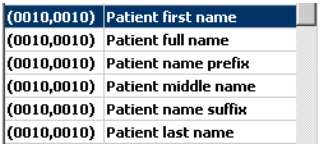


Figure 81: NX Service and Configuration Tool - RIS mapping

You can choose which to map (the whole name or one or more of the sub-fields). It is not advised to use both as the results are unpredictable.

Note: *This also applies to Referring physician, patient mother, requesting physician, performing physician, orderer, …*

Buttons

Unmap	Remove a mapping from the mapped fields. It will be added to the unmapped fields
Details	For displaying the received values of a 'sequence' field. E.g. when selecting the line containing '0008:0082' and pressing the details button, the following window will appear showing all received data for this sequence field:

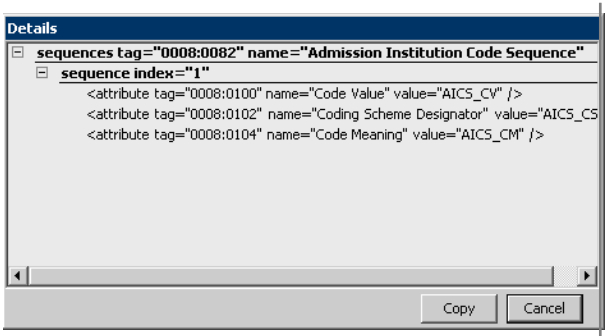


Figure 82: NX Service and Configuration Tool - RIS mapping

Import	Import a mapping from file. Current mappings will be lost.
Export	Export current mapping to file.

In case of a DICOM RIS: only the fields that are mapped will be requested from the RIS during the DICOM modality worklist query.

As a RIS may have problems with some attributes, leave them out from the mapping to avoid these problems.

Do NOT unmap the 7 mandatory DICOM attributes (in case of a DICOM RIS):

- Station AE Title list
- Scheduled start date
- Scheduled start time
- Modality
- Performing physician full name (+)
- Full patient name (+)
- PatientID

The Unmapped Fields Section

This section lists:

- at the right side: all known NX fields that are not part of the actual mapping
- at the left side: a working area to add new fields (‘Add unmapped field’ button) or for fields that get unmapped from the ‘mapped fields’ section

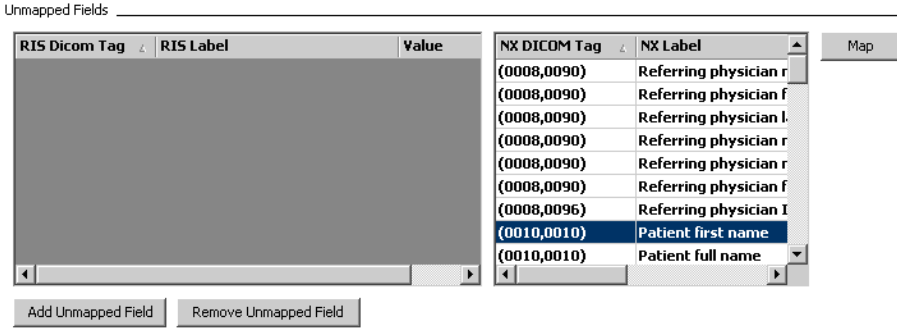


Figure 83: NX Service and Configuration Tool - RIS mapping

Map	Adds current selection to the mapping.
Add unmapped field	Allows to enter a new field to the unmapped field list. By supplying the DICOM tag and label, a new unmapped field will be created. This unmapped field can then be mapped to the NX DICOM tag in a further step.
Remove unmapped field	Allows to remove a field from the unmapped field list.

Available Default Mappings

- For DICOM RIS:

These can also be used for a non-DICOM RIS!

Default DICOM mapper	A fixed list of +/- 50 attributes. This is the same list as what was queried in NX 1.0 but 'problem' attributes left out (E.g. 0040, 000B). Select this mapping to view the contents.
Extended DICOM mapper	A fixed list of +/-96 attributes. Select this mapping to view the contents.
Extended DICOM mapper 2006	A fixed list of +/-95 attributes. Select this mapping to view the contents.

- For non DICOM RIS:

non DICOM V0 protocol	Select this mapping to view the contents.
non DICOM V1 protocol	Select this mapping to view the contents.

non DICOM V2 protocol	Select this mapping to view the contents.

Note: *These can also be used for a DICOM RIS.*

- Buttons in the RIS mapping section

Query RIS	Performs a DICOM Modality Worklist Query towards the RIS with given settings. The query uses the configured mapping.
Restore defaults	Allows to load a default mapping, all current mapping will be lost.

More Details on Mapping

Topics:

Person Name Representation

NX will internally resolve some attributes to the correct 'Person Name Representation', depending on its setting in 'User Interface Configuration – General settings'.

- If there is no "+" at the end of the attribute in the NX Label column, then NX will adapt the person name representation to the representation configured in the User Interface Configuration section of the NX Service and Configuration tool.

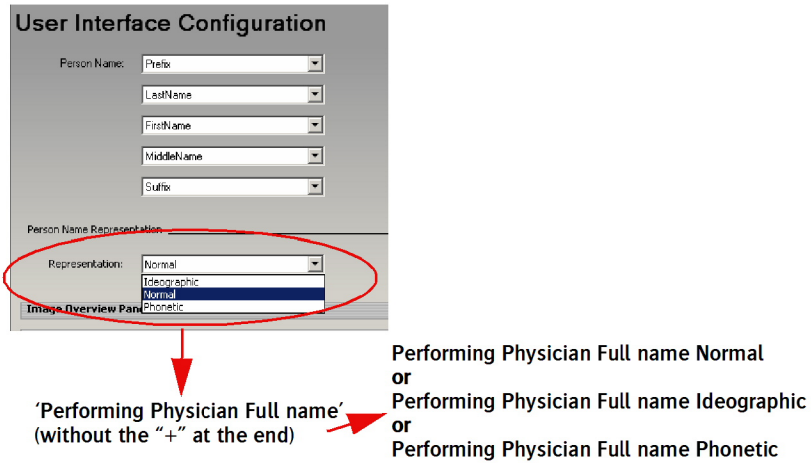


Figure 84: NX Service and Configuration Tool - RIS mapping - Person Name Representation

- If there is a "+" at the end of the attribute in the NX label, all Person Name Representations will be sent.

  For example:

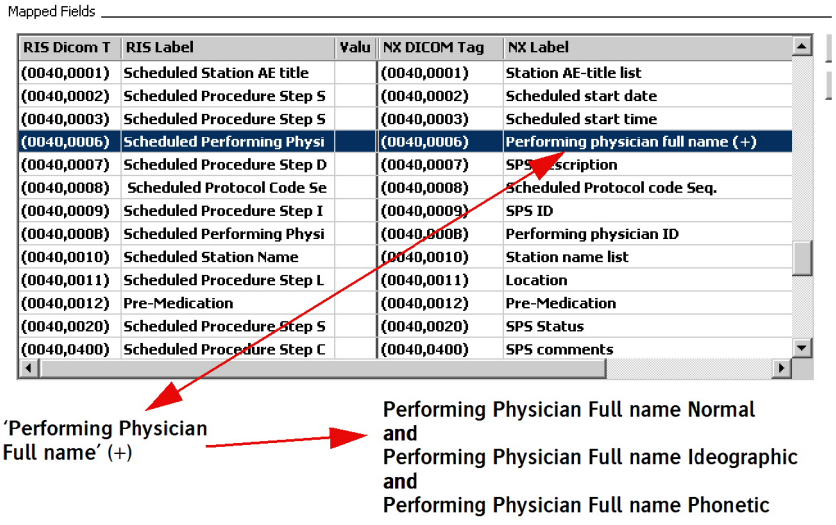


Figure 85: NX Service and Configuration Tool - RIS mapping - Person Name Representation

Related Links

Person Name Representation on page 220

Red Lines

After a query, some mapping lines may be shown in red. This means that the type of the value received from the RIS does not match the type of the configured field, change this.

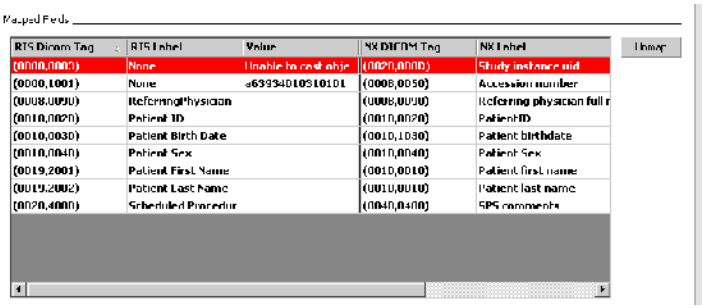


Figure 86: NX Service and Configuration Tool - RIS mapping - Red Lines

It can also mean that the value cannot be interpreted, i.e. values which are defined by DICOM and which are mapped to enums

Automatic Selection of Exposure, Exam or Exposure group

Note: *A wrong specification of protocol codes for the exposure group may lead to insufficient image quality.*

This section explains automatic exposure (or exam or exposure group) selection in NX from the code values coming from RIS (query).

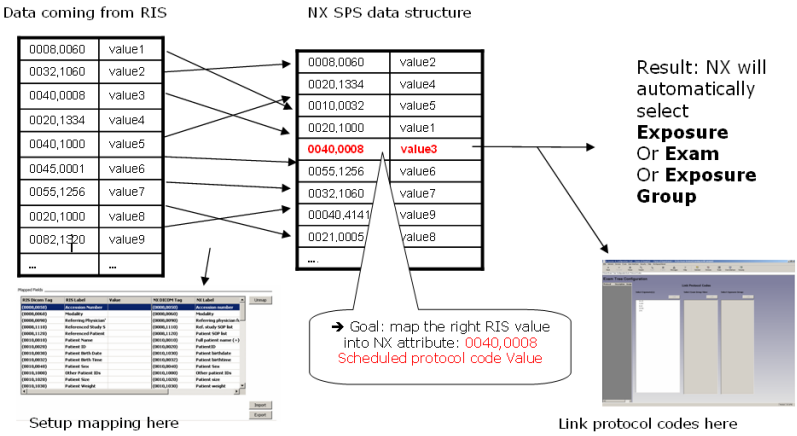
When automatic exposure (or exam or exposure group) selection is required, then the NX attribute 0040,0008 ‘Protocol code value’ needs to be filled in correctly with the right data coming from the RIS. This field does the magic of automatically selecting at NX run time of:

- an exposure
- or an exam
- or an exposure group

Two configuration actions are required to enable automatic selection of exposure, exam or exposure group:

1. Mapping the correct RIS data field to NX field 0040,0008 'Protocol code value'. Which fields can be mapped, is described in “Mapping the Protocol code value” . How to map RIS fields is described in “The Mapped Fields Section” .
2. Linking protocol code values to the right exposure, exam or exposure group. This is done in the 'Link protocol code' page.

Overview



Related Links

Mapping the Protocol code value on page 126
The Mapped Fields Section on page 118

Topics:

Mapping the Protocol code value

0040,0008 Scheduled protocol code sequence is a sequence with 4 sub-fields:

- Protocol code value.
- Protocol code scheme designator.
- Protocol code scheme version.
- Protocol code meaning.

In the NX mapping list you will find these fields all having the same tag: 0040,0008, even the sequence itself:

0040,0008	Scheduled protocol code sequence
0040,0008	Protocol code value
0040,0008	Protocol code scheme designator
0040,0008	Protocol code scheme version
0040,0008	Protocol code meaning

Only 'protocol code **value**' needs to be filled in correctly with data from the RIS! This can be obtained in 3 ways:

- Map the complete **0040,0008** RIS **sequence** to the NX 0040,0008 Scheduled protocol code **sequence**.

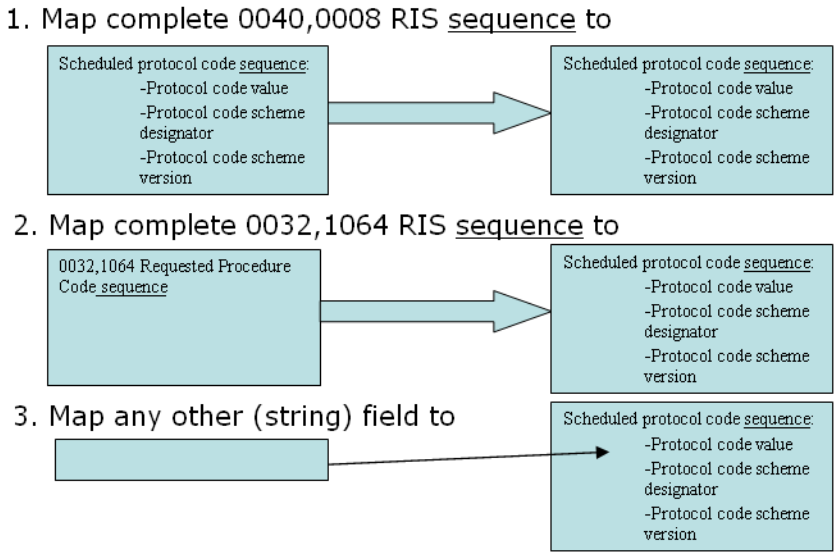
  This can be done as both are 'sequences' (and you can only map a sequence to a sequence).

  or
- Map the complete **0032,1064** RIS Requested procedure code **sequence** to the NX 0040,0008 Scheduled protocol code **sequence**.

  This can be done as both are sequences (and you can only map a sequence to a sequence). This mapping is typically required for connecting Agfa's Connectivity Manager.

  or
- Map the custom (string) field where the RIS stores the protocol code value to NX 0040,0008 protocol code value.

Overview:



Japanese Protocol Codes

For Japanese protocol codes, it is not enough to map to 0040,0008 Protocol code value. Two extra attributes must be used, separated by ^ when configuring protocol codes in the examtree, see JJ1017 guidelines under "Configuring Main RIS Settings" .

For examtree configuration:

protocol code value = Scheduled Procedure Step Sequence code value ^ Concept Code Sequence Code Value of target Region ^ Concept Code Sequence Code Value of Imaging Direction

Related Links

Configuring Main RIS Settings on page 111

Configuring the X-Ray Device

This type of device is only available when one of the following licenses is enabled:

- IDIS1 connection
- XRG connection for mammo
- DR workflow

Note: *Only enabling the DR Workflow license will give the user NO ability to add a new X-ray device or configuring it (for DR also the IDIS license should be enabled).*

Topics:

Configuring an X-Ray Device

To configure the X-Ray Device, click **New**.

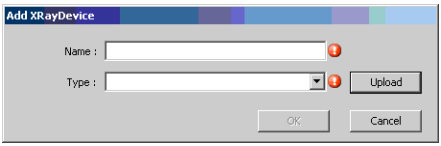


Figure 87: Add X Ray Device dialog.

Name	Enter a nickname
Type	Select the correct model file, matching the X-Ray Device manufacturer and type. If a DR Detector is connected to the NX, a dedicated model file for DR support must be loaded. If none are available, install XRDI software first. These model files are only installed on the system after installing the XRDI software (which comes separate from NX). Further, for each model a specific license must be available in the license file (ALF).

The content of the X-Ray device screen depends further on the loaded type. Typically, only connection related parameters can be entered and a test button is foreseen.

To delete the X-Ray Device, click **Delete**. All modality settings in the exam tree configuration will be cleared.

Configuring a DR Detector

To configure a DR Detector:

1. Go to the Detector Settings pane in the X-Ray Device Configuration screen and click Add.
2. Select the correct model file, matching the DR Detector manufacturer and type.

   Model files are available in C:\Agfa\Healthcare\NX\Bin \XRayDeviceModels\DRPanelModels\

   In the Detector Settings pane, a new tab is created that contains the settings for the DR Detector.

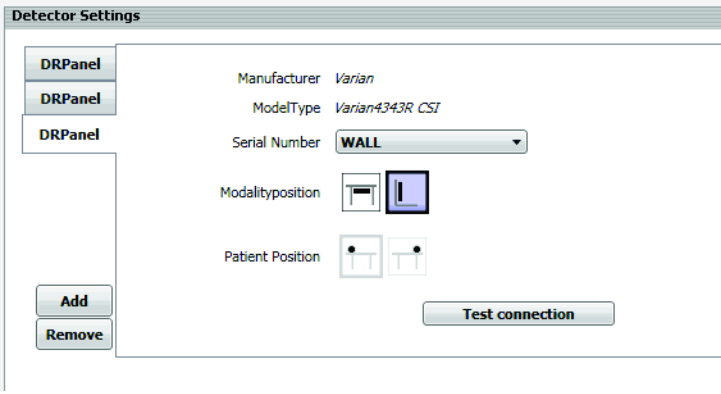


Figure 88: X-ray Device Configuration screen - Detector Settings pane.

3. Identify an installed DR Detector by selecting the Serial Number.

   If none are available, install the DR Detector driver software first.

Table 1: DR Detector Settings

Modality Position	The DR Detector can be assembled in the table or in the wall stand or used for free exposures.
Patient Position	A table detector can be configured for 'head left' or 'head right' patient positioning.
Nickname	A portable DR Detector can be given a nickname to identify it among other portable DR Detectors.
Load Direction	Specify how the detector is inserted on a wall stand.
Panel Orientation	Specify where the detector connector will be located when using the detector on each of the available modality positions.

Trigger Mode	The available options depend on the type of detector.
Norm. Factor	(dynamic imaging only) Calibration of ABS for pulsed fluoroscopy.
Morm. Factor CF	(dynamic imaging only) Calibration of ABS for continuous fluoroscopy.

Configuring the Generator Settings

To configure the generator settings:

1. Go to the Generator Settings pane in the X-Ray Device Configuration screen.
2. Define the generator settings.

   The available settings depend on the type of generator. Typical settings are listed in the table below.

Table 2: Generator Settings

Number of tubes	Specify if the X-ray system has an extra X-ray tube configured.
NX sends collimator settings to Generator	Collimator settings can be defined in the exam tree and sent to the modality as part of the exposure parameters.
Automatic collimator	Specify if the X-ray system has an automatic collimator.
Collimator type	The available types depend on the configuration.
Focal Spot Size (Small Focus/ Large Focus)	Specify in mm the size of the focal spot
Fluo Boost Allowed	(dynamic imaging only) Allow the operator to temporarily increase the fluo dose while the exposure is ongoing.
Fluo Boost Factor	(dynamic imaging only) Factor by which the dose is increased.
AEC Levels	(dynamic imaging only). Specify for static images and for rapid sequences the cut-off dose for the AEC in μGy. These values control dose (Low/Medium/High) selection and the Adult/Pediatrics selection in the Software Console.
Target Pixel Values	(dynamic imaging only) Specify for fluoroscopy exposures the target dose level. These values control the dose (LowLow/Low/High/HighHigh) selection and the Adult/Pediatrics selection in the Software Console.
RS Dose Control	(dynamic imaging only) Specify a factor by which the AEC level for rapid sequences is decreased, depending on the selected sensor area.

Maximum Fluoroscopy Duration	(dynamic imaging only) When the maximum duration time is reached, the fluoroscopy exposure is stopped.
Warning Signal Interval	(dynamic imaging only) The warning signal interval time can be set up in two ways: • Sound a repeating alarm with a fixed frequency, e.g. each minute. • Sound an alarm to warn that the maximum duration time is almost reached, e.g. after 4 minutes, if the maximum duration time is set to 5 minutes.
Warning Signal Duration	(dynamic imaging only) Specify the duration of the warning signal.

Configuring the Retrofit Box Settings

If the configuration contains a Retrofit Box or DR Detector Router, apply the correct settings:

1. Go to the Retrofit Box Settings pane in the X-Ray Device Configuration screen.

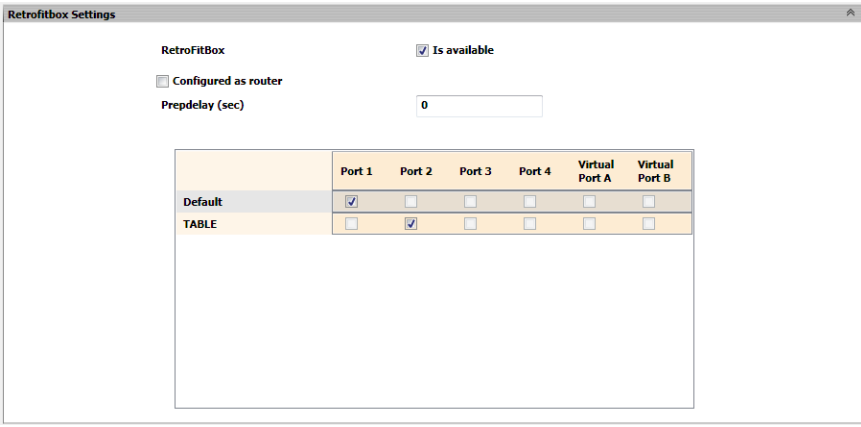


Figure 89: Retrofit Settings

2. Define these settings:

   - whether the configuration contains a Retrofit Box or DR Detector Router
   - whether it is configured as a router

     If the exposure button is connected to the Retrofit Box, it is not configured as a router and a prepdelay must be configured.
   - the prepdelay

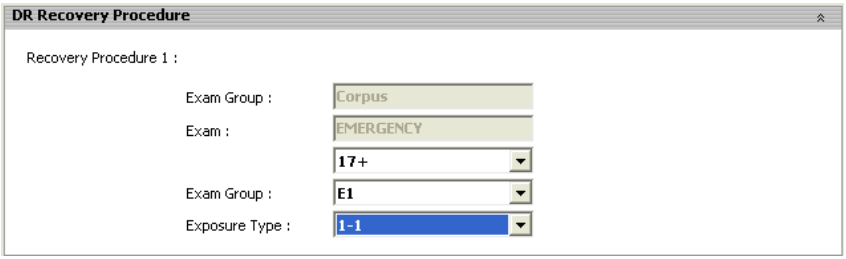
     When pushing the exposure button, the Retrofit Box starts the prep cycle on the X-ray generator. After a configurable delay the exposure cycle is started.
   - the ports to which the DR Detectors are connected.

Configuring the DR Image Recovery Exposure Type

Define the settings to apply when a DR image is received that cannot be linked to a listed exposure. A patient category, examination group and Exposure type will have to be defined.

To configure the DR image recovery exposure type:

1. Go to the DR Recovery Procedure pane in the X-Ray Device Configuration screen.



2. Define a patient category, examination group and Exposure type.

Configuring the Room Settings

The Room settings reflect the physical setup of the FLFS equipment and are only available for the service user.

To configure the X-Ray Device Room settings

1. Go to the Room Settings pane in the X-Ray Device Configuration screen.

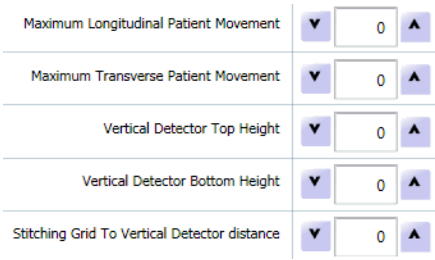


Figure 90: Room Settings

2. Define:

   - the distance between the detector and the stitching grid of the DX Full Leg Full Spine stand
   - the maximum values for horizontal and vertical patient movement
   - the vertical detector top height, which is the height of the top edge of the detector in its highest position during a FLFS-examination.
   - the vertical detector bottom height, which is the height of the bottom edge of the detector when the detector is in its lowest position during a vertical FLFS-examination.

Configuring Rooms

Topics:

General

Note: *The Configure Rooms functionality is specific for the Central Monitoring System.*

Note: *Some settings in the NX Service and Configuration Tool for the Central Monitoring System may be greyed out because they are not relevant to the Central Monitoring System.*

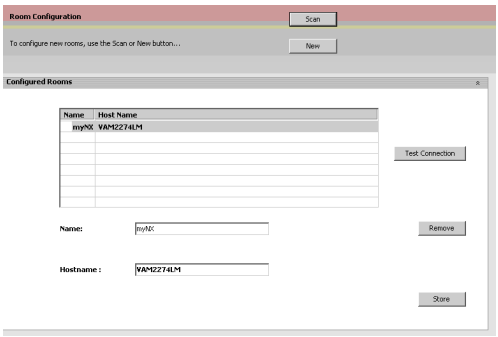
This screen allows configuring the NX workstations that are connected to a Central Monitoring System.

The 'configured rooms' table lists all NX workstations which will be connected to this CMS.

Only NX workstations belonging to the same NX software family can be connected (they have the same main version numbers).

For example:

- Allowed connection is NX2.0.6805 and NX2.0.6805 SU2
- Not allowed connection is NX2.0.6805 and NX3.0.2900



Scan button	Performs a network scan for connected NX workstations (the NX back end application must be running on the in-room PCs). From the result dialog, NX workstations can be added to the 'configured rooms' table.

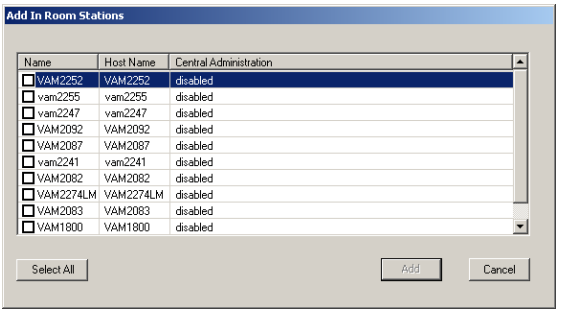


Figure 91: NX Service and Configuration Tool - Scan button for In Room Stations

The 'Central Administration' column indicates whether the Dose and RRAP statistics are archived centrally or not.

On an in-room NX this is configured in Workflow management.

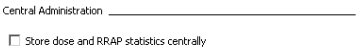


Figure 92: NX Service and Configuration Tool - Central Administration check box

New button	To manually add a new NX
Test connection button	Test connection with selected NX
Remove button	Remove an NX from the 'configured rooms' table
Store button	Adds values entered manually in 'name' or 'hostname' to the 'configured rooms' table
Name	To edit\enter a nickname of an NX
hostname	To edit\enter a hostname of an NX

Related Links

Identification General on page 52

Configuring Workstations for Central Administration

This is a setting for NX-in-room workstations which are part of a Central Monitoring System. When Central Administration is enabled, repeat reject analysis statistics and dose monitoring statistics will be available on the Central Monitoring System, and these functions will be disabled on the NX workstation.

Procedure:

1. The NX workstation of which you want to have the administration centrally managed, must be configured for Central Monitoring on the Central Monitoring System.
2. On the NX Workstation of which you want to have the administration centrally managed, open the NX Service and Configuration Tool and go to “Workflow Management” .
3. If it is collapsed, open the Identification pane and select the Central Administration check box.

   From this moment, managing repeat reject statistics and managing dose monitoring statistics will only be possible on the Central Monitoring System.

   The Main Menu entries for repeat reject analysis and dose monitoring statistics will be disabled on the in-room NX workstations.

Note: *It is not necessary to configure all NX workstations in the Central Monitoring System for central administration.*

Note: *It is not possible to manage Repeat Reject statistics locally and Dose Monitoring statistics centrally on the same workstation (or vice versa).*

Note: *When activating Central Administration, data that were already on the local workstation are transferred to the Central Monitoring station and vice versa.*

Note: *A CMS configured to work with Exposure Index can NOT communicate with a workstation that is configured to operate with LGM and vice versa.*

Configuring Security Issues

Topics:

General Security Settings

Topics:

Configuring SSL Settings

Secure DICOM means that DICOM connections will be setup over SSL (Secure Sockets Layer).

Refer to your local service representative for advise on configuring the system and setting up the required certificates for the NX workstation and the connected devices.

For devices that have SSL enabled, NX supports by default the TLS 1.x protocol. If a device does not support TLS 1.x and requires the older SSL 3.0 protocol, this protocol can be enabled on NX by checking "Allow SSL on Secure Sockets".

Configuring Audit Log Settings

Audit logging allows NX to send short messages to an Audit log server on the network. These messages indicate some actions done on NX.

Topics:

Audit Log General Settings

Audit log server settings	
Hostname IP address IP Stack	Fill in either hostname and IP Stack or IP address (IP Stack detected automatically).
Port number	Network port number the audit log server is listening on
Fallback log file settings	
Maximum file size	When the audit Log server is unreachable, NX stores the audit logs in a file. This file should be on the local filessystem. When the configured file size is reached, the oldest loggings are removed (FIFO principle).
Location	
Send log file	Use the Send Log file button to manually send the contents of the fallback log file to the Audit Log server when it is back online.
Time zone settings	
Time zone	Specifies the time indication in the audit logs, according Local time zone or UTC

NTP Settings

NTP: Network Time Protocol, used to retrieve the current time from a network time server. Allows NX to synchronize the time in the audit loggings with the time on the NTP server.

Hostname IP address IP Stack	Fill in either hostname and IP Stack or IP address (IP Stack detected automatically).

Port number	The port number the network NTP server is listening on for the NTP protocol.

Managing Users

Topics:

General

With the NX Service and Configuration Tool you can configure users. Typically, users are imported from the Windows domain of the hospital. The users are displayed in a list view (at the left hand side of the central viewing area). Details of the selected user are displayed within the body of the central viewing area.

If you select a user, the roles of this user will be displayed in the Role pane.

In this window you can:

- Define new users
- Delete users
- Manage roles. When clicking this last button, a separate User Role Configuration page is shown.

Assigning User Roles

The User Role Configuration page is dedicated to the functionality related to user roles and associated operations.

The user roles are displayed in a list view (at the left hand side of the central viewing area) and a detailed overview of the users assigned to this role and the tasks related with this role are displayed within the body of the central viewing area.

If you change the roles of the user logged in, the NX Service and Configuration Tool reflects the changes in the role of the user logged in immediately. For example, if you are logged in as “crservice” and you change the role of crservice, changing the user interface will be impossible from that moment.

Assigning user roles to users in a group

1. Add the group to the NX configuration.

   Proceed as for adding a user and select the **Group** option in the **Add account** dialog
2. Assign roles to the group instead of the individual users.

All users in the group share the assigned roles.

Managing Licenses

To manage licenses for NX, you must perform a number of actions in two separate environments, as described in the following sections.

- “Managing Licenses in the License Manager” .
- “Managing Licenses in the NX Service and Configuration Tool” .
- “Trial Licenses”

Note: *it is strongly advised to always use the License Manager to check the status of the licenses instead of the licenses screen in the NX Service and Configuration Tool !*

Topics:

- *Managing Licenses in the License Manager*
- *Managing Licenses in the NX Service and Configuration Tool*
- *Trial Licenses*

Managing Licenses in the License Manager

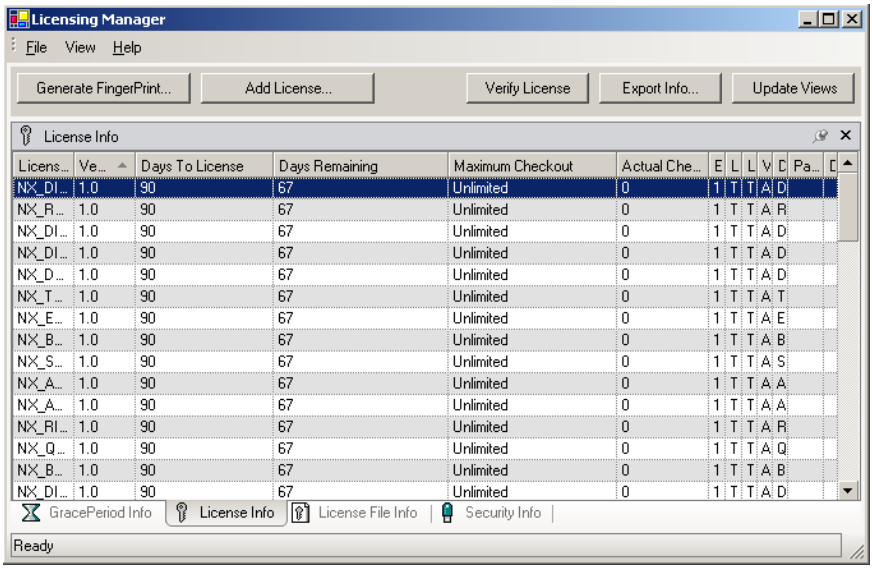


Figure 93: License Manager

Run the License Manager via : START MENU > AGFA > SERVICE > License Manager.

Use the License Manager to check:

- Installed licenses
- remaining days valid
- whether the system is running in grace or not
- dongle info
- verification of license versions
- …

The licenses screen in the NX Service and Configuration Tool is only to be used in exceptional situations !

The licenses shown are technical licenses (similar as in the License Manager). Technical licenses are typically grouped in an ABC code package (=option or starter pack which is available for sale).

Each license has a version number.

Eg. 1.0 for license NX_QA_TOOLS.

This version number can change over different NX releases.

The version number must be correct for the functionality behind the license to be useable in NX. The License Manager indicates if there is a license number mismatch.

Managing Licenses in the NX Service and Configuration Tool

On an online NX, the NX Service and Configuration Tool will not startup if no ALF (license file) is loaded.

On an NX workstation, the NX Service and Configuration Tool lists all NX licences that are available in the ALF file (license file). The NX Service and Configuration Tool will not startup if no ALF is loaded in the License Manager.

No licenses from other products are shown in here (eg. from XRDI or AutoQC²).

The NX Service and Configuration Tool allows to disable licenses and enable them later. These actions do not affect the loaded ALF.

Enabling/disabling licenses has an immediate effect on the other screens of the NX Service and Configuration Tool (the corresponding functionality will be shown or not).

In an offline situation, no ALF is required and the NX Service and Configuration Tool will list all existing NX licenses. You can disable licenses that will not be present on the online NX in order to represent the online situation as much as possible.

Note: *The NX Service and Configuration Tool does NOT check if there is a license version number mismatch. If the license version number is not correct, the corresponding functionality in NX will not be useable, although it is configurable in the NX Service and Configuration Tool. Use the License Manager to check for version mismatches.*

Trial Licenses

NX will display the status of the trial (demo) licenses every 6 hours (plus at startup):

Figure 94: NX - License Overview at startup

The expire date of trial licenses will be indicated.

Expired demo-licenses remain active until the next reboot of the NX Workstation

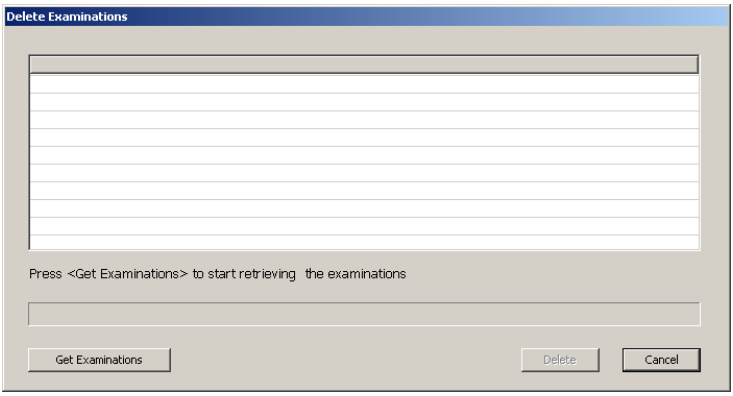
Service Log In

In case no Service Engineers are defined in Manage Users and Manage user roles, this login dialog allows you to enter a fixed username\password. Then it becomes possible to configure a service engineer in Manage Users and Manage user roles (typically yourself).

Deleting Examinations

Allows to force-delete exams in NX.

This functionality should be used with care!



Click the 'Get Examination' button to load all exams in NX. You can select and delete them afterwards.

Note: *The selected exams are permanently removed from the system without checking first whether they are closed, printed, archived or exported. unrecoverable image loss can happen if an exam is deleted before the images are archived, printed or exported.*

This functionality should only be used when all normal ways to remove an exam fail (automatic cleanup by NX, deletion via the NX main menu, …)

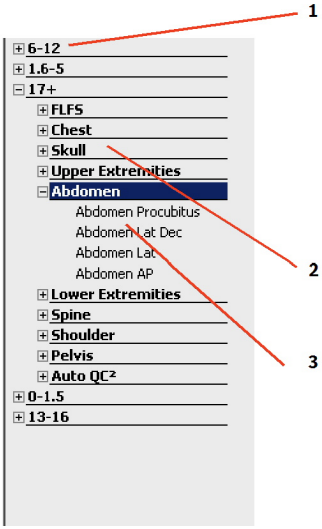
Configuring the Examination Tree

Topics:

Main Window

Topics:

Introduction



1. Patient categories
2. Exam groups
3. Exposure types (or 'exposures')

Next to these three types, also exposure groups exist (see further).

Topics:

Patient Categories

Patient categories are used to group all the exam groups for a particular age or weight. Default categories are based on age: 0-1.5 year, 1.6-5 year, 6-12 year, 13-16 year, 17+ years.

Patient categories can be configured to be determined by weight or any other demographic parameter and to use different boundary values. The first four patient categories - the Pediatric patient categories - will only be visible when the system has the pediatric license enabled. Otherwise, only the adult patient category will be visible.

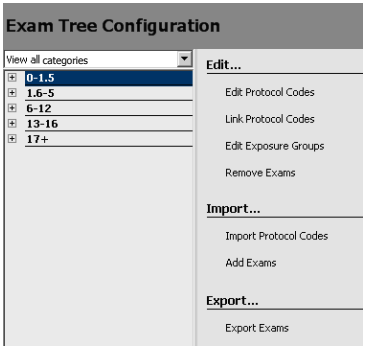


Figure 95: NX Service and Configuration Tool - Exam Tree with Pediatric License

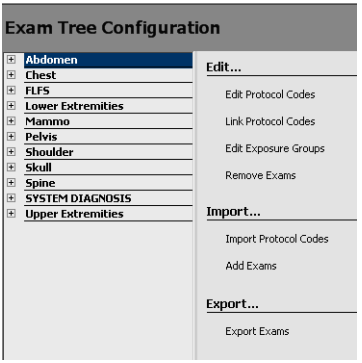


Figure 96: NX Service and Configuration Tool - Exam Tree without Pediatric License

Related Links

Examtree Routing on page 63

Exam Groups

Exam groups group all exposures that are clinically related. Example: Upper extremities, Chest, Skull, Lower extremities, Abdomen, Spine. Each Exposure type can only be part of one Examination group. Every patient category will have the same exam groups. E.g. If one patient category contains the exam group Chest, all patient categories will contain this exam group.

Exposure types for test images will be stored in a special test images exam group ('System diagnostics'). These are partially editable by the Service Engineer.

Exposure Types (or 'Exposures')

An exposure type is the central element in the exam tree. It contains predefined values for acquisition of an image.

Related Links

Configuring Exposure Types on page 167

Exposure Groups

next to the three levels (patient categories, exam groups, exposure types) that make up an NX exam tree, there are also exposures groups.

Related Links

Configuring Exposure Groups on page 193

Main Screen Functions

Topics:

Editing

Edit protocol codes	Refer to “Editing Protocol Codes”
Link protocol codes	Refer to “Linking Protocol Codes”
Edit exposure groups	Refer to “Configuring Exposure Groups”
Remove exams	Removing an exam group: removes it for in all patient categories! You cannot undo this!

Related Links

Editing Protocol Codes on page 209
Linking Protocol Codes on page 205
Configuring Exposure Groups on page 193

Exporting

Export exams	Just exports the selected exams (including their contents) to an xml file (for all patient categories).
Export Exam Processing Parameters	Export all exams in the Exam Tree with their image processing parameters to an xml file with associated xsl style definition for displaying in a browser.

Adding new Exams, Exposures or Exposure Groups

Add new exam	To create a new exam group. This new exam group will be created for all patient categories.
Add new exposure	To create a new exposure (can be put in any exam group).

Add new exposure group	To create a new empty exposure group. You can configure it further in “Configuring Exposure Groups” .

Related Links

Configuring Exposure Groups on page 193

Finding and replacing

This screen allows you to selectively change attributes of exposures.

A the left side, search criteria can be entered. Applying the Find button queries the whole exam tree search for exposures that adhere to the given search criteria. The query results are shown at the bottom.

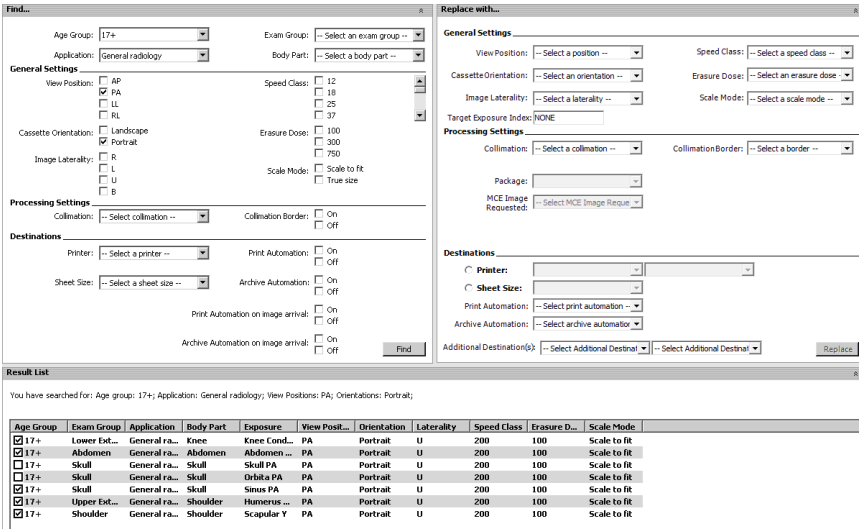


Figure 97: NX Service and Configuration Tool - Find and Replace

At the right side, you can enter new values for certain exposure attributes. By clicking the Replace button, the exposures in the result list are updated with the new values. To store the changes, click the Commit button, to undo the replace, click the Cancel button.

Note: Application type is a mandatory field in the Find pane. A Find and Replace operation is always limited to the context of one application type.

Editing the Target Exposure Index setting

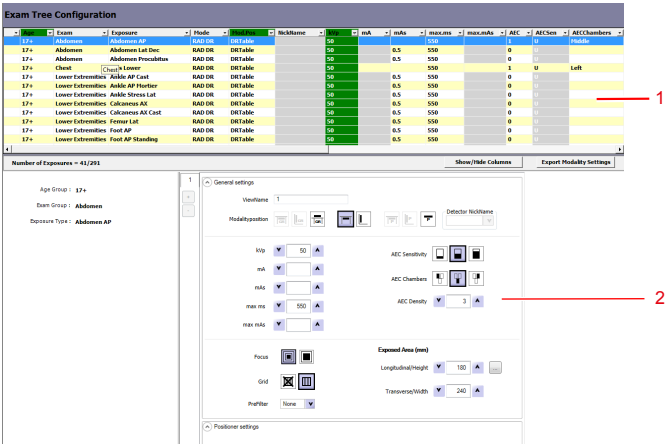
To update the Target Exposure Index for the matching exposure, enter a new value (one digit after the decimal point).

To clear the Target Exposure Index for the matching exposures, leave the field blank.

To leave the Target Exposure Index unchanged, enter 'NONE'.

Edit exposure modality settings

This screen allows you to selectively change modality settings of exposures.



1. Grid view
   - Each row represents an exposure
   - Each column contains the value for an exposure setting
2. Settings pane for the exposure of the selected row

Figure 98: Edit exposure modality settings

- Filter the exposures by selecting a value in the drop-down selector on the header title row of each column.
- Select a row to edit the modality settings in the settings pane.
- Select multiple rows using the shift or control keys and right click a column to apply the same setting to all selected rows.

Table 3: Cell color indication

Cell	Color	Meaning
column header	green	the exposures are filtered on this value
value	green	this value has been modified and is stored in the table
	red	this value fails validation

Cell	Color	Meaning
	light gray	the setting is not applicable for this type of exposure
	dark gray	the type of the exposure has been changed and this setting has become not applicable
	orange	these cells are selected and a new setting can be applied

Note: Settings for exposures with multiple subexposures cannot be modified by selecting multiple rows. Select the rows one by one and modify the settings in the settings pane.

Export modality settings

Click **Export modality settings** to create an XML file containing all data in the grid.

This file is intended as an offline reference. Editing or importing data using the XML file is not possible.

Partial Loading of an Exam Tree

It is possible to load an exam tree from a full export file via the File menu: 'Partial load from file'. This allows exam tree replication between NX systems that share common settings.

Related Links

Loading a Partial Configuration from File on page 26

Tips & Tricks

Topics:

Using the Context Menu

Use the right mouse button on an exam tree element to do certain actions.

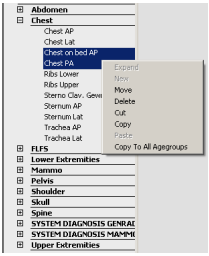


Figure 99: NX Service and Configuration Tool Exam Tree Context Menu

Moving Exposure Types

Multiple exposure types can be selected at once (using the CTRL key) and moved together to the target exam group through a dialog box (accessed through the context menu “Move” function).

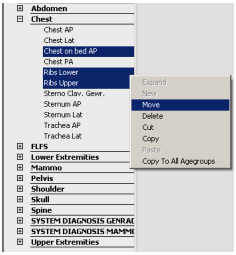


Figure 100: NX Service and Configuration Tool - Exam Tree - Moving Exposure Types

Moving one exposure type can also be done by changing its Exam group:

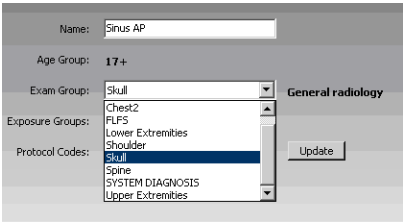


Figure 101: NX Service and Configuration Tool- Moving Exposure Types.

Copying Exposure Types

Select one or more exposure types, or select an exam and copy the exposure types using the context menu 'copy' fuction (or 'copy exposures'). Multiple exposure types can be selected at ons using ghte CTRL key.

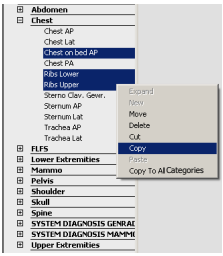


Figure 102: NX Service and Configuration Tool - Exam Tree - Cpoying Exposure Types

Select the target exam group and paste the copied exposure types using the context menu 'paste' function.

The context menu function 'copy to all categories' can be used to copy one or more exposure types and automatically paste them in the corresponding exam groups of all other patient categories.

Note: *If exposure types are copied from one patient category to another, Musica1 processing parameters are set to the default of the target patient category. The exam tree of a Musica 2 or Musica 3 system also contains Musica 1 processing parameters, as fallback in case the Musica 2 or Musica 3 license is not available anymore.*

Note: *If exposure types that are configured with the Musica 2 or Musica 3 Neo-Natal package are copied to another patient category, the copied exposure types will be configured with the Musica 2 or Musica 3 General Radiology package.*

Note: Modality Settings are not copied but reset to default values.

Configuring Examination Groups

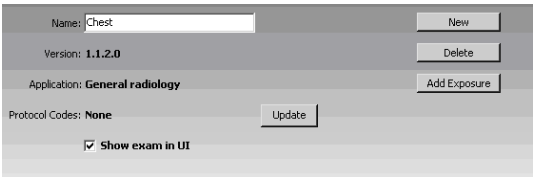


Figure 103: NX Service and Configuration Tool - Configuring Examination Groups

Name	Name (can be edited, will be changed in all patient categories)
Version	Shows the version number. Typically only useful for System Diagnostics exam groups. Clicking on it shows the release history.
Application	Indicates the application. Existing applications are: genrad, mammo, dental, uro-tomo, radiotherapy. Only genrad and mammo exam groups can be created. The others can only be obtained by importing them from older QS systems. Only genrad and mammo can be used with Musica 2 or Musica 3.
Protocol codes	The protocol code(s) that will cause this exam to be selected in NX when received from RIS.
Show exposure in UI	Whether this exam should be shown in the Add Image pane of NX.  **Figure 104: NX - Show exam in UI**

	A maximum of 21 exams groups can be shown in the Add Image pane. Their position can be configured in the UI configuration – Compose Exam. Refer to “Compose Exam” .  **Figure 105: NX Service and Configuration Tool - Compose Examination**
New button	To create a new exam group. This new exam group will be created for all patient categories.
Delete button	To delete current exam group.
Add exposure button	To create a new exposure (can be put in any exam group, not necessarily current one)
Update button	Allows assigning unlinked protocol codes to this exam group. Another way to do this is via the Edit Protocol Codes page or the Link Protocol Codes page.

Related Links

Compose Exam on page 252

Configuring Exposure Types

Each Exposure Type has its private set of processing parameters. A maximum number of 2000 exposure types can be configured in the exam tree.

Musica

Dependent on the Musica2 license, the NX configuration viewer will only show either the Musica 1, Musica 2 or Musica 3 processing parameters.

Note: *Quality assurance images ('System diagnostics') are always processed with Musica 1.*

X-ray Exposure settings

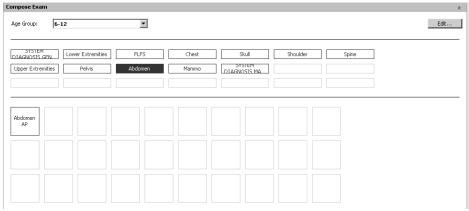
A set of parameters, used to send to the X-Ray Generator to generate the exposure or (in the case of multiple exposures on 1 cassette) to generate a partial exposure. For a partial exposure, up to 4 settings can be attached to an Exposure type. E.g. for the "Spine cervical LAT + AP" exposure, two exposures have to be made on 1 cassette.

Topics:

General Settings

Figure 106: NX Service and Configuration Tool - Configuring Exposure Types - General Settings

Name	Name (can be edited)
Acquisition Mode	(dynamic imaging only) **Rad only** The exposure contains a single Rad image **Fluo** The exposure contains a number of fluo sequences (for positioning) and a single Rad image **Dynamic** The exposure contains any number of fluo sequences, rapid sequences and Rad images. The acquisition mode controls the creation of acquisition groups. For exposure types with acquisition mode **Fluo** or **Dynamic**, an acquisition group is automatically created when starting the examination. The fluo sequences, static images and rapid sequences in the acquisition group are displayed in the lower half of the image overview pane.
Show exposure in UI	Whether this exposure should be shown in the Add Image pane of NX.  **Figure 107: NX - Show exposures in UI** A maximum of 30 exposures per exam group (*) can be shown in the Add Image pane. Their position can be

	configured in the UI configuration – Compose Exam. Refer to “Compose Exam” .  **Figure 108: NX Service and Configuration Tool - Compose examination** (*) this includes exposure groups
New button	To create a new exposure (can be put in any exam group, not necessarily current one)
Delete button	To delete current exposure.

Related Links

Exposure Groups on page 194
Compose Exam on page 252

General Settings for FLFS Exposure

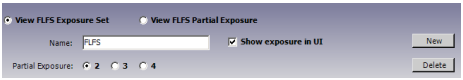


Figure 109: NX Service and Configuration Tool - General Exposure settings for FLFS Exposure

View FLFS Exposure set	Shows the exposure settings below for the stitched image. The stitched image is the resulting image after having stitched the separate (partial) images.
View FLFS partial exposure	Shows the exposure settings for the partial (separate) images. The settings apply for all partial images in this set. Cassette Orientation of FLFS exams is only editable on Partial exposures.
Partial exposure	Defines the number of partial images this set consists of.

Note: *For DR FLFS further settings are required.*

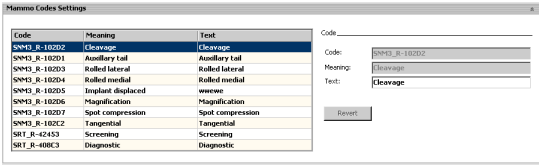
Related Links

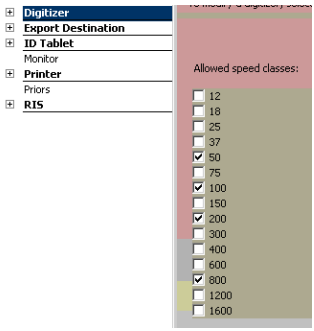
Additional Controls for FLFS examinations on page 186

Exposure Settings

Note: *The user must be aware that incorrect image orientation may occur due to a wrong value for patient orientation attribute, or selecting the wrong examination type.*

Category	The patient category this exposure belongs to.
Exam group	Can be used to move current exposure to the newly selected exam group.
Exposure groups	The exposure groups that use this expsore, see "Exposure Groups"
Protocol codes	The protocol code(s) that will cause this exposure to be selected in NX when received from RIS.
Update button	Allows assigning unlinked protocol codes to this exposure. Another way to do this is via the Edit Protocol Codes page or the Link Protocol Codes page.
Body part	Select a (DICOM) body part.
Auto flip lateral images	Unchecked: lateral images are not flipped. Checked: lateral images are flipped (some hospitals want laterals to face the opposite direction).
Auto rotate 180 degree	Unchecked: default image orientation. Checked: the image is rotated 180 degrees compared to the default image orientation. Only available for DR images. This field is reset when changing modality position.
View position	View position
Anatomic region	The Anatomic Region can be configured with the values from CID 4009 (see DICOM PS 3.16). It is a more precise way to specify the body part, and is used in DX images.
View code	Defines the exposure technique.

	The view code should be consistent with the view position.
View modifier code	(mammo only) Defines the mammo exposure technique. These values can be 'translated' in General Configuration – Mammo codes setting:  **Figure 110: NX Service and Configuration Tool - View Modifier Code**
Automatically update image laterality when adding marker	When this option is enabled, the image laterality will change from "both" to "left" or "right", as soon as you place a left or right marker respectively. If the image laterality is not "both", it will stay unaffected.
Image laterality	Image laterality.
Implant present	Mammo only.
Cassette orientation	Cassette orientation.
Erasure dose	The dose used to erase the cassette (100mR - 300mR - 750 mR). More exposed cassettes (direct radiation areas) may require a higher exposure dose (also depending on used body part).
Speed class	Determines the sensitivity used by the Digitizer when scanning a cassette. This can manually be overruled at run time in NX in the Edit image detail pane.

	 **Figure 111: NX Service and Configuration Tool - Speed Class configuration**
Target Exposure Index	This value is used as reference for Dose Monitoring Statistics on Exposure Index systems. The value is a decimal number with one digit after the decimal point.
Positioning Sample	Use the button to select an image file that will be displayed in the image preview pane as a guidance for preparing the exposure. If multiple images are available, select an image from the dropdown.
Recommended settings	Type text that will be displayed in the image preview pane as a guidance for preparing the exposure.

Related Links

Configuring Digitizers System Wide on page 77
Configuring General on page 66

Musica 1

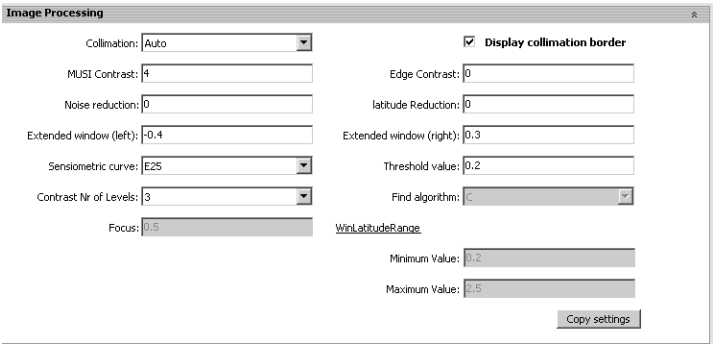


Figure 112: NX Service and Configuration Tool - Musica 1 dialog box.

Copy settings button	Allows copying the settings from another exposure to this one.

Note: *If the default musica processing settings are modified in the NX application using the "Save as default" button in the "Modify MUSICA Settings" dialog, it is advised to make a back-up of these settings, by loading the active configuration in the Service and Configuration Tool and saving it to an external file.*

Musica 2 and Musica 3

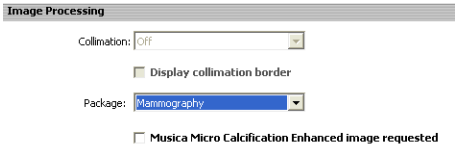


Figure 113: NX Service and Configuration Tool - Musica 2 and Musica 3 dialog box.

Collimation	The configuration for auto collimation (which will try to detect diagnostic areas in the image). Not editable in case of mammo exams (always disabled for mammo). Rows\columns: In case of several images on one cassette ('sub exposures'), the rows and columns selection can help the collimation detection algorithm (*). But with current CPU power, this setting can as well be left at 'Auto'.
Display collimation border	During preprocessing of the image, auto-collimation will try to detect diagnostic areas in the image. If this flag is enabled (and the black border license is present), then also a black border is drawn on the non diagnostic areas. The density of the black border can be configured in General Configuration – Workflow management - Image presentation. Available for Musica 1, Musica 2 and Musica 3 but not for mammo.
Package	The Musica 2 or Musica 3 package to be used (list depends on installed license). For some packages (eg. Chest, abdomen, skeleton) both a pediatric and an adult version are present. The NX Service and Configuration Tool doesn't show both packages. It shows only one, the underlying package will be taken by the software depending on the age (> 12years = adult)

	Some packages are listed twice, with 'T2' added on the second item. This allows for applying the same package in different exam types with different taste settings. When you get an indication of 'missing license' this means that you do not have (one of) the 'premium' licenses.
Musica Micro Calcification Enhancement image requested	For mammography images identified for an exposure type requesting Musica Micro Calcification Enhancement (MCE), an extra copy of the image is sent to a dedicated archive destination. The extra copy is processed using the MCE image processing. MCE is not available for Musica 3 and for DR Mammo.
Enable CATH processing	The CATH button can be made available in the NX Editing environment. The 'CATH' option allows the user to create a copy of the image with a dedicated processing applied to enhance visibility of catheters. The availability of this option is restricted to diagnostic genrad exposure types.
Invert Images	(dynamic imaging only) Display the images with inverted pixel values.

For modalities that support dynamic imaging, these options can be set separately for each type of imaging:

- Rad/Frame
- Fluo
- Rapid Sequence

When configuring the examination tree, verification warning 268 may appear, showing the following text: "There are no exposure types using the specialized Musica 2 or Musica 3 packages".

There exist 6 premium packages:

- chest adults.
- abdomen adults.
- skeleton adults.
- chest pediatrics.
- abdomen pediatrics.
- skeleton pediatrics.

They belong to the NX Musica 2 or Musica 3 PLATINUM license.

As long as there is not at least 1 exposure configured for each existing premium package, Verification warning 268 will appear.

So, for the warning to disappear you need to configure an exposure type for each of the 6 packages.

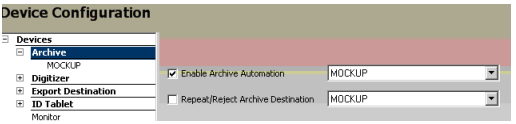
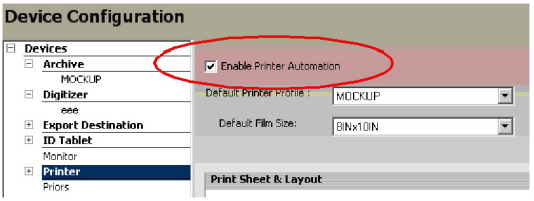
- For the 'adults' packages you need to take an exposure in one of the two higher patient categories.
- For the 'pediatrics' packages you need to take an exposure in of one of the lower patient categories.

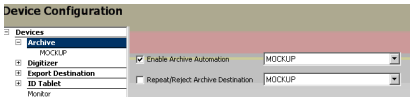
Note: *System diagnostics exposures only use Musica 1 and are not editable.*

Related Links

Image Presentation on page 58
Managing Licenses on page 148
Action Buttons on page 256
Image Presentation on page 58

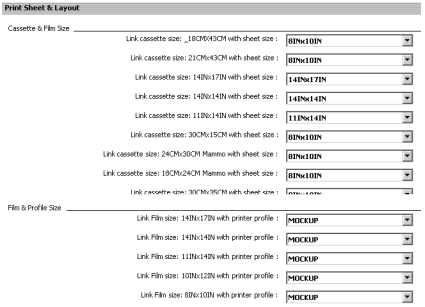
Automation

Automatically archive to primary destination	When enabled, image will automatically be sent to the general automation destination as configured in the Archive setup.  **Figure 114: NX Service and Configuration Tool - Automatic Archiving configuration** When the general archive automation is disabled, then this functionality is also automatically disabled here. For modalities that support dynamic imaging, these options can be set separately for each type of imaging: • Rad/Frame • Fluo • Rapid Sequence
Automatically Print Rad Images	When enabled, image will automatically be sent to the general automation destination as configured in the Printer setup.  **Figure 115: NX Service and Configuration Tool - Automatic printing configuration** when the general print automation is disabled, then this functionality is also automatically disabled here.
Automatically Save Fluo Images on NX	(dynamic imaging only) Check this box to prevent fluo images from being discarded after the examination is closed.

additional destinations	when configured, the image will (additionally) be sent to these destinations. (this setting does not depend on 'automatically archive image') when the general archive automation is disabled, then this functionality is also automatically disabled here.  **Figure 116: nx service and configuration tool - additional destinations** 'Enable archive automation' is enabled. | | 'Automatically archive image' | 'Additional destinations' | |---|---|---| | Exposure 1: | Disabled | Archive A | | Exposure 2: | Disabled | Archive B |

Note: Following setup allows to send exposure 1 to archive A and exposure 2 to archive B.

Printer Settings

FilmSize	Can be put on DEFAULT or on a specific film size. DEFAULT: means depending on the cassette size the film size is taken and from this the printer is chosen. All this is configured in the printer setup screen. 'DEFAULT' is not allowed for FLFS Stitched image since a FLFS Stitched image does not come from one cassette. On a specific film size: then the corresponding printer is taken from the setup in the printer setup screen Printer setup screen:  **Figure 117: NX Service and Configuration Tool Printer Settings - Film Size**
Printer & filmsize	The specific printer & film size will be used.
Textbox position	Only valid for a 1/1 layout.
Scale mode	True size or best fit.
Film orientation	Only applies to exposures on a DR Detector. The automatic setting links the film orientation to the orientation of the exposed area. The film orientation can also be forced to a specific setting.

Related Links

Modality Exposure Settings on page 188

Modality Settings

The NX Workstation can be connected to:

- the X-Ray System Generator to send and receive X-Ray exposure setting and
- a DR Detectors to exchange image data

These settings are only available when:

- XRDI software is installed next to NX on the PC
- The correct licenses for DX-Si ('IDIS1 Connection') and optionally for DR Workflow are installed.
- Musica mammo license is not enabled
- An X-Ray device is configured. This is a genrad type of modality (e.g. GEN IT generator or Quantum Techvision), optionally including DR functionality.

In the Modality Settings pane, you can configure the attributes of the connected modality for each exposure type in the examination tree. The set of configurable modality settings depends on the modality type.

When an exposure type is selected during identification the configured modality settings are sent out as presets to the X-Ray device console.

Related Links

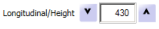
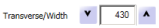
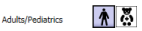
Configuring the X-Ray Device on page 129

Topics:

Modalities with DR functionality

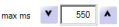
Topics:

General Settings

Modality Position	Refer to the NX User Manual for the meaning of the modality position icons (Section Using Examinations). The available modality positions depend on the installed and configured X-Ray Device.
Nickname 	A portable DR Detector must be identified by its nickname.
Sensor Area 	(dynamic imaging only) The area on the DR Detector that to which the image acquisition will be restricted
Exposed Area	The exposed area defines the area on the detector to which exposure is limited by means of collimation. Using the drop-down button, matching cassette sizes can be selected.
Exposed Area - Longitudinal/Height 	Collimator setting
Exposed Area - Transverse/Width 	Collimator setting
Grid 	Specifies if a grid is needed
PreFilter 	Specifies if a filter is applied (available filters depend on the collimator type)
Tube Selection 	(only for systems with more than one X-ray tube) The X-ray tube that is used for the exposure
Adults/Pediatrics 	If the X-ray generator is configured with different dose levels based on age groups, this setting specifies which dose level is used for the exposure. This setting is not linked to the patient categories on the NX workstation.

RAD Settings

Table 4: RAD Settings

ViewName 	A name for this (sub-) exposure.
kV	The radiographic kV value (X-ray tube voltage) selected for the exposure.
mA 	The radiographic mA value (current) selected for the exposure.
mAs 	The radiographic mAs value selected for the exposure.
max ms 	The integration time of the DR detector. When operating the DR detector, the calculated exposure time (ms) or manual overrides can never exceed the integration time (detector ms) of the DR detector.
max mAs 	The maximum allowed mAs value for exposures using AEC. The highest allowed setting for max mAs depends on the mA setting and the detector ms setting.
Focus 	The focus setting for the X-ray tube.
Sensitivity 	Each of these buttons allows adjustment of the AEC cut-off dose (low dose, middle dose and high dose: depending on configuration at installation time). Each time a button is selected (highlighted), the others are automatically deselected. The settings for detector sensitivity rely on calibration during installation of the X-Ray System. The selection of density defines a correction expressed in EP (Exposure Points) that can be used for patient transparency compensation. The default setting for the exposure should be 0.
Chamber 	Each button indicates its related physical location of the selected field in the AEC exposure detector. Any combination of fields can be selected and the color of the buttons changes (highlighted) when active. The exposure is

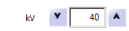
	ended if any of the selected fields measures the AEC cut-off dose.
Density 	These buttons are used to adjust the AEC cut-off dose (and patient entrance dose accordingly). Density can be increased and decreased in a range of -4 to +4. Each step increases or decreases the dose by a fixed ratio. The exact value of the ratio depends on the generator type and configuration. The selection of density defines a correction expressed in EP (Exposure Points) that can be used for patient transparency compensation. The Default setting for the exposure should be 0.

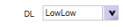
Note: *When setting the kV and mAs values, the user must be aware that the validation of the entered values does not take in account the power of the generator (GEN IT 80 is assumed), the selection of the focus (large focus is assumed) and the power value (100% is assumed). This means that when both the maximum for kV and mAs are configured as preset, and the generator does not meet the entered maxima, the generator will be set on lower values by generator protection.*

Fluo Settings

(dynamic imaging only)

Table 5: Fluo Settings

Fluo Type 	Pulsed fluoroscopy and continuous fluoroscopy
kV 	The radiographic kV value (X-ray tube voltage) selected for the exposure.
FPS 	Frames per second
ABS 	The Automatic Brightness System (ABS) adjusts the dose to compensate for variation in patient thickness and density of bodyparts, in order to get the optimal dose for optimal image quality.

ABS curve 	The X-ray generator can be configured with a set of different curves to control the exposure parameters when ABS is active.
ROI 	To optimize the image quality of the anatomatically relevant region in the image, the automatic brightness system can be applied to a smaller region in the center of the image. Only the brightness of the region of interest is taken into account to control the exposure parameters.
DL 	Adjustment of the ABS dose (depending on configuration at installation time).
ms 	The pulse width (in milliseconds) selected for the exposure.
mA 	The radiographic mA value selected for the exposure.

RS Settings

(dynamic imaging only)

Table 6: RAD Settings

kV 	The radiographic kV value (X-ray tube voltage) selected for the exposure.
mA 	The radiographic mA value (current) selected for the exposure.
mAs 	The radiographic mAs value selected for the exposure.
max mAs 	The maximum allowed mAs value for exposures using AEC. The highest allowed setting for max mAs depends on the mA setting and the detector ms setting.
FPS 	Frames per second
Focus	The focus setting for the X-ray tube.

Focus 	
Sensitivity 	Each of these buttons allows adjustment of the AEC cut-off dose (low dose, middle dose and high dose: depending on configuration at installation time).
Chamber 	Each button indicates its related physical location of the selected field in the AEC exposure detector. Any combination of fields can be selected and the color of the buttons changes (highlighted) when active.
Density 	These buttons are used to adjust the AEC cut-off dose (and patient entrance dose accordingly).

Positioner Settings

For modalities that provide extra controls, e.g. positioning of the modality, additional panes are displayed to store the default settings for the exposure.

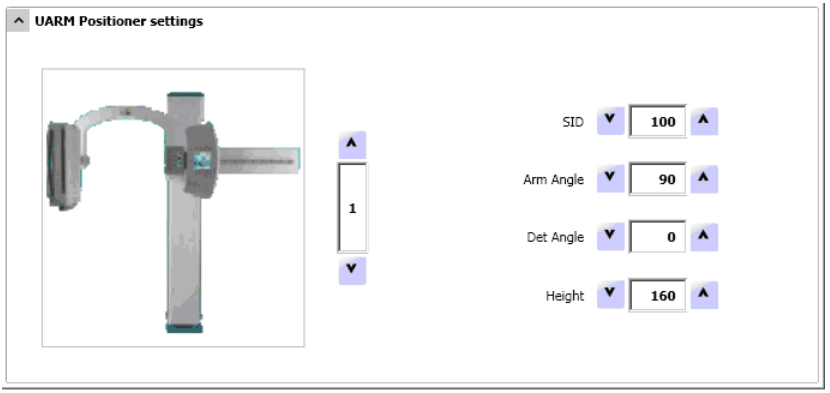


Figure 118: Settings for positioning of a U-arm modality.

Additional Controls for FLFS examinations

For modalities that support the automatic FLFS workflow, additional controls are available in the modality positioner settings pane.

To configure the automatic FLFS workflow

1. Go to the modality Positioner Settings pane in the Exposure screen.

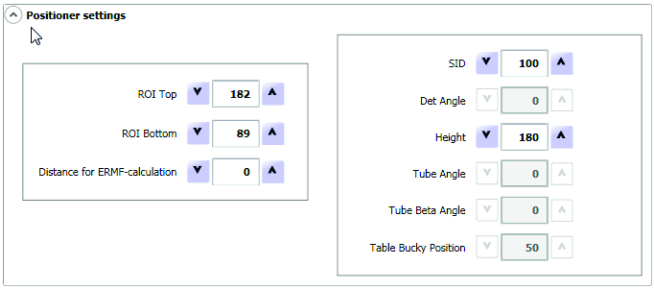


Figure 119: Positioner Settings

2. If the FLFS examination uses a portable DR Detector, select its nickname in the drop-down list.
3. Define default values for
   - the distance between the stitching grid of the DX Full Leg Full Spine stand and the patient. This value is used to apply ERMF-calibration on the stitched image.
   - the top of the ROI
   - the bottom of the ROI
4. For the top partial image, define a default position:
   - the height of the DR Detector (applies only when using the DX Full Leg Full Spine Stand)
   - the SID

   The modality will move into this position to prepare the FLFS examinations.
5. For each partial image, define the Modality Exposure Settings by adding an exposure view for each partial image. If more partial images are needed than defined in the examination, the settings for the last partial image will be repeated.
6. Go to the Image Processing pane in the Exposure screen and select the availability and position of the Stitch Quality Annotation. The Stitch Quality Annotation is a text annotation that can automatically be added to the image, containing information about the stitching process.

Exposure Views (subexposures)

Multiple views can be used when examinations require more than one exposure on a cassette.

To add a subexposure

1. Click the '+'-button next to the Settings pane.
2. Apply the settings for this subexposure.

   Navigate from one subexposure to another using the navigation buttons at the top left of the Modality Settings pane.

Note: Multiple views are not available for exposures on a DR Detector.

Figure 120: NX Service and Configuration Tool - Modality Settings - Exposure with two subexposures defined

Modalities without DR functionality

Topics:

- *Modality Exposure Settings*
- *Modality Position and Receptor Type Settings*
- *Exposure Views*

Modality Exposure Settings

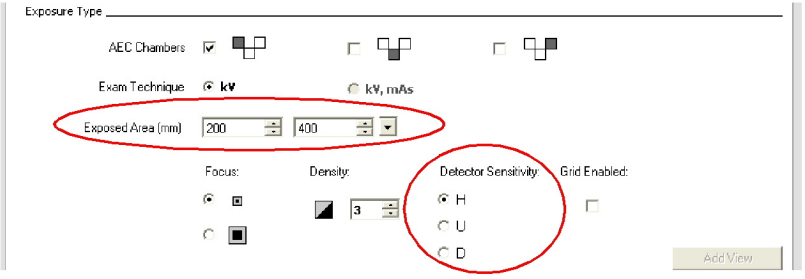


Figure 121: NX Service and Configuration Tool - Modality Settings - Exposure Type section

AEC Detector Sensitivity	The selection of detector sensitivity defines the cut-off dose of the AECchambers for the exposure. The settings for detector sensitivity (High sensitivity [H], Universal [U] and Detail[D]) rely on calibration during installation of the X-Ray System. The selection of density defines a correction expressed in EP (Exposure Points) that can be used for patient transparency compensation. The default setting for the exposure should be 0.
Exposed Area	Only applicable for exposures on a DR Detector. The exposed area defines the area on the detector to which

	exposure is limited by means of collimation. Using the drop-down button, matching cassette sizes can be selected.
AEC Density	The selection of density defines a correction expressed in EP (Exposure Points) that can be used for patient transparency compensation. The Default setting for the exposure should be 0.

Modality Position and Receptor Type Settings

- For systems without DR functionality:

Figure 122: NX Service and Configuration Tool - Modality Position

Modality Position	Defines if the exposure is a table exposure, a wall exposure or a free exposure. The Modality Position information is located in the Exposure Type section of the Modality Settings pane.

Exposure Views

With the Add View button you set the actual exposure parameters and you can continue with a new definition. Multiple views can be used when examinations require more than one exposure on a cassette. The Add View button is located bottom right in the Exposure Type section of the Modality Settings pane.

Note: *Multiple views are not available for exposures on a DR Detector.*

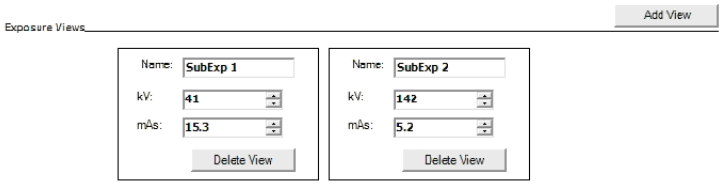


Figure 123: NX Service and Configuration Tool - Modality Settings - Exposure Views section

Note: *When setting the kV and mAs values, the user must be aware that the validation of the entered values does not take in account the power of the generator (GEN IT 80 is assumed), the selection of the focus (large focus is assumed) and the power value (100% is assumed). This means that when both the maximum for kV and mAs are configured as preset, and the generator does not meet the entered maxima, the generator will be set on lower values by generator protection.*

Modality Settings Examples

Topics:

To define a DR Table Exposure with AEC:

1. Click the icon for fixed DR Detector in the table.

Figure 124: NX Service and Configuration Tool - icon for fixed DR Detector in the table

2. Select the AEC chambers to be used.

   By default, the middle one will be selected. All combinations are possible.

   As a result of the choice for AEC:

   - The examination technique will be kV.
   - The Focus will be enabled.
   - Detector sensitivity will be enabled.
   - Density parameter will be enabled.
   - kV field will be enabled under Exposure Views.
   - mAs field will be disabled under Exposure Views.

3. Configure the enabled parameters.

To define a DR Table Exposure without AEC:

1. Click the icon for free exposure using the Portable DR Detector.

   Figure 125: NX Service and Configuration Tool - icon for free exposure using the Portable DR Detector.

2. Deselect the middle AEC chamber (which is selected by default). No AEC chambers should be selected.

   As a result of the choice for disabling AEC:

- The examination technique will be kV, mAs.
- The Focus will be enabled.
- Detector sensitivity will be disabled.
- Density parameter will be disabled.
- kV field will be enabled under Exposure Views.
- mAs field will be enabled under Exposure Views.

3. Configure the enabled parameters.

To define a CR Wall Exposure with AEC:

1. Select the CR Wall Exposure radio button.

Figure 126: NX Service and Configuration Tool - CR Wall Exposure radio button

2. Select the AEC chambers to be used.

   By default, the middle one will be selected. All combinations are possible.

   As a result of the choice for AEC:

   - The examination technique will be kV.
   - The Focus will be enabled.
   - Detector sensitivity will be enabled.
   - Density parameter will be enabled.
   - kV field will be enabled under Exposure Views.
   - mAs field will be disabled under Exposure Views.

3. Configure the enabled parameters. The table below shows the possible values:

Parameter	Possible value
Focus setting	Small - Large
Detector Sensitivity Setting	D _ U _ H
Density	-3 / +3
kV	40 - 150 kV

To define a CR Wall Exposure without AEC:

1. Select the Free Exposure radio button.

Figure 127: NX Service and Configuration Tool - Free Exposure radio button

2. Deselect the middle AEC chamber (which is selected by default). No AEC chambers should be selected.

   As a result of the choice for disabling AEC:

   - The examination technique will be kV, mAs.
   - The Focus will be enabled.
   - Detector sensitivity will be disabled.
   - Density parameter will be disabled.
   - kV field will be enabled under Exposure Views.
   - mAs field will be enabled under Exposure Views.

3. Configure the enabled parameters. The table below shows the possible values:

Parameter	Possible value
Focus setting	Small - Large
kV	40 - 150 kV
mAs	0,5 to 800 mAs

Configuring Exposure Groups

An Exposure group is a collection of Exposure types. It can be linked to a protocol code. By default, all Exposure types will print on separate print sheets. Special print templates can be assigned to automatically print selected Exposure Types on the same print sheet.

Topics:

Exposure Groups

Beside the three levels that make up an NX exam tree (patient categories, exam groups, exposure types), there exist also the concept of 'exposures groups'.

An exposure group is a collection of (one or more) exposure types. It can contain exposure types of different patient categories. When the exposure group is used in an examination, only the exposure types of the category the patient belongs to are added to the examination. Also, the order of the exposure types can be specified per patient category. This order will be used for displaying the exposure types in the image overview pane.

An exposure group can be configured to be selectable in the NX user interface to allow manual selection of the exposure group when starting an examination.

An exposure group is indicated in NX as follows:

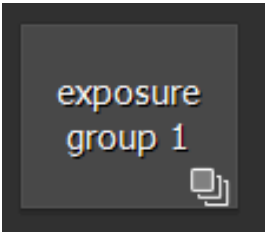


Figure 128: NX - Exposure Groups presentation

Example: create exposure group X with contents:

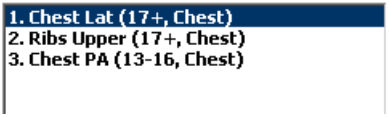


Figure 129: NX Service and Configuration Tool - contents of exposure group

When in NX an exam is created, the 17+ selection screen will look as follows:

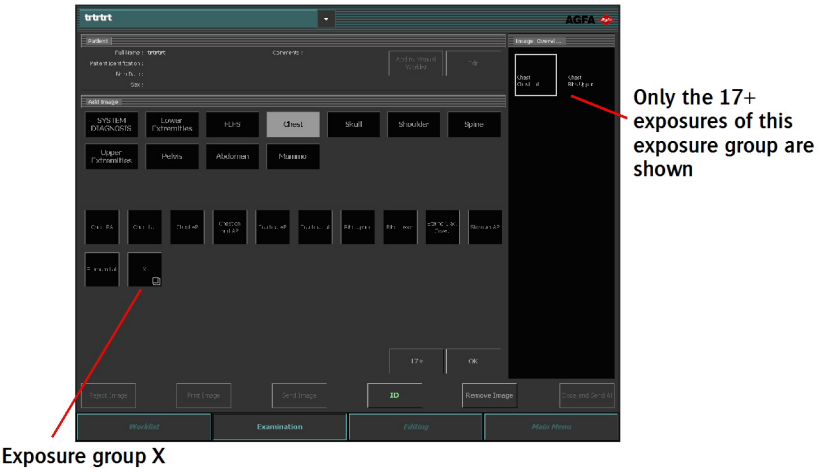


Figure 130: NX Exposure group example in NX

For 13-16:

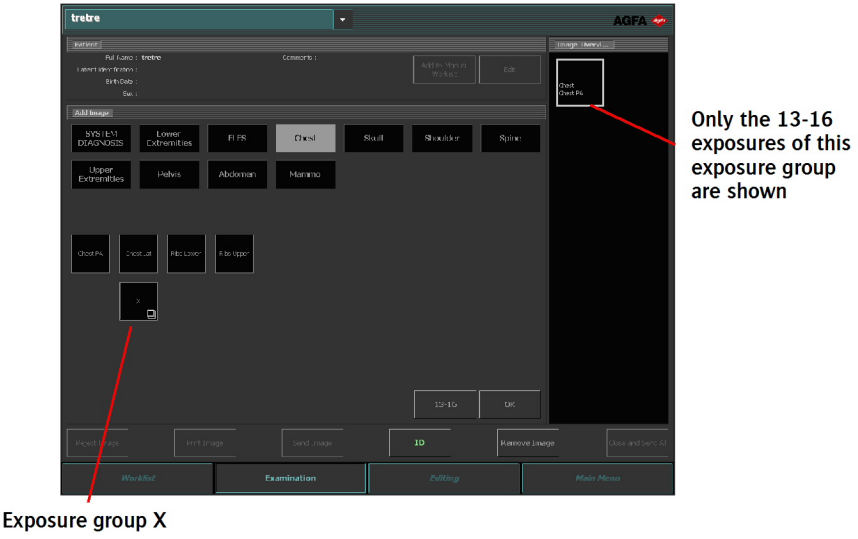


Figure 131: NX Exposure group example for 13 - 16

An exposure group can be linked to a protocol code (to allow automatic selection of the exposures of the exposure group when the protocol code is received from the RIS). This is the same as for an exposure or an exam.

For protocol codes, please refer to “Automatic Selection of Exposure, Exam or Exposure group” for an overview on protocol codes.

Finally, for each patient category, the exposure types in the exposure group can be linked to print profiles allowing automatic printing of multiple exposure types on a sheet in a preconfigured way.

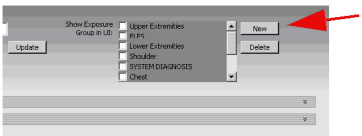
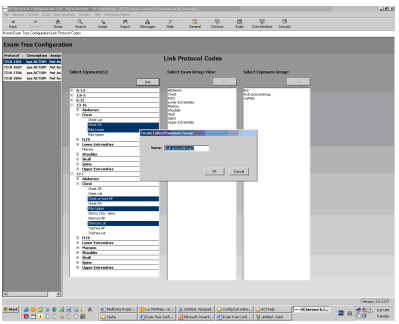
Note: If it doesn't contain any Exposure Types for the category of that patient, the Exposure Group will not be visible during normal NX operation.

Related Links

Automatic Selection of Exposure, Exam or Exposure group on page 125

Creating Exposure Groups

Expsoure groups can be created in different ways:

… In the main exam tree pane: Add new exposure group	 **Figure 132: NX Service and Configuration Tool - creating exposure groups**
… in the edit exposure groups pane:	 **Figure 133: nx service and configuration tool - creating exposure groups**
… in the link protocol codes pane:	 **Figure 134: nx service and configuration tool - creating exposure groups** Details see: “Linking Protocol Codes” .

Related Links

Configuring Exposure Groups on page 193
Linking Protocol Codes on page 205

Editing Exposure Groups

In this pane, exposure groups can be created, changed or deleted.

Exposure groups can also be created in “Linking Protocol Codes”

Name	Change its name
Protocol code	The protocol code(s) that will cause this exposure group to be selected in NX when received from RIS.
Show exposure group in UI	Under which exam group to show this exposure group in NX, see further
Enable Automated DR Full Screen Sequence	When enabled: After acquiring an image, the image is displayed in full screen mode and the next thumbnail is selected automatically.
New button	To create a new exposure group
Delete button	To delete current exposure group
Update button	Allows assigning unlinked protocol codes to this exposure group. Another way to do this is via the Edit Protocol Codes page or the Link Protocol Codes page.

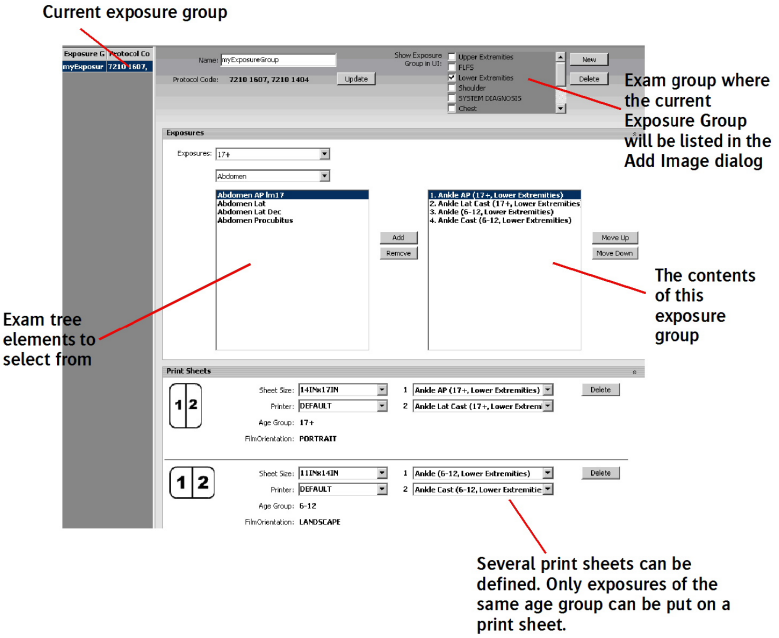


Figure 135: NX Service and Configuration Tool - Overview editing exposure groups.

Related Links

Linking Protocol Codes on page 205

Show Exposure group in UI

The configuration screen allows to select the Exam Group where the current Exposure Group will be listed in the Add Image dialog.

The software will automatically pick the next free cell in the Exam Group to display the Exposure Group..

If an Exam Group has no free cells, it is not listed (an Exam Group can contain only 30 elements).

If the Exposure Group contains exposures of different patient categories, the Exam Group must have a common free cell for all patient categories in order to be listed.

Example:

The following example shows the examination composition of an Exam Group in the two patient categories that are contained by the Exposure Group. The first common free cell is number five.

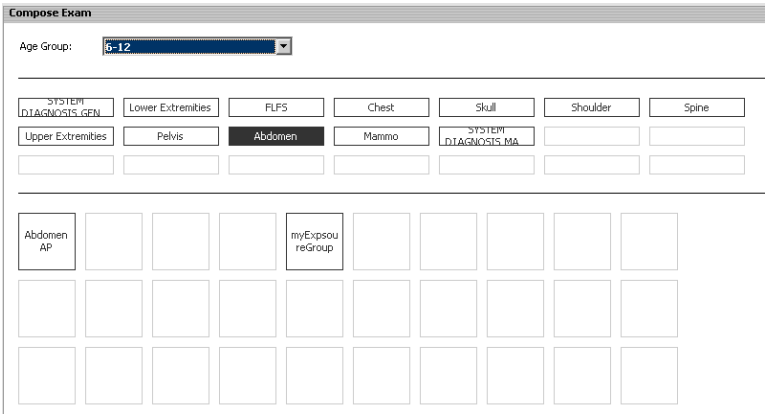


Figure 136: NX Service and Configuration Tool - Editing Exposure Groups

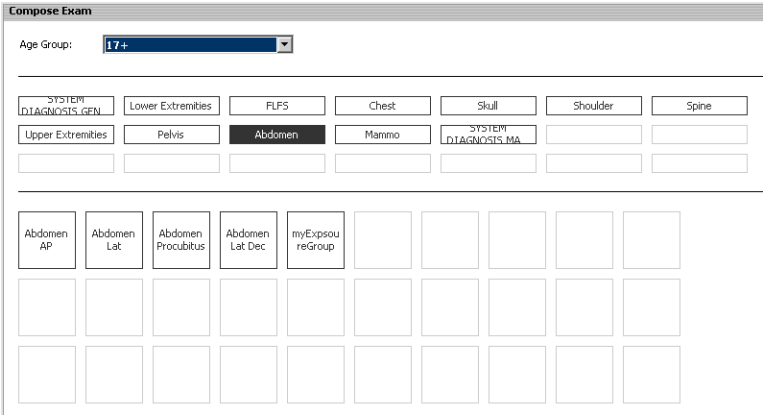


Figure 137: NX Service and Configuration Tool - Editing Exposure Groups

Related Links

Compose Exam on page 252

Adding a New Print Sheet Dialog Box

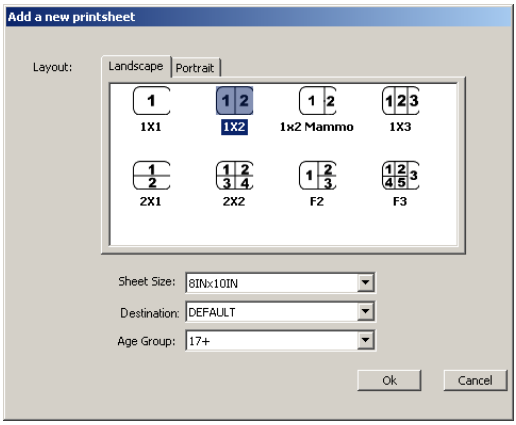


Figure 138: Adding a New Print Sheet dialog box.

When selecting the DEFAULT destination, the printer is defined in the printer setup page under 'Film & profile size' depending on the configured sheet size.

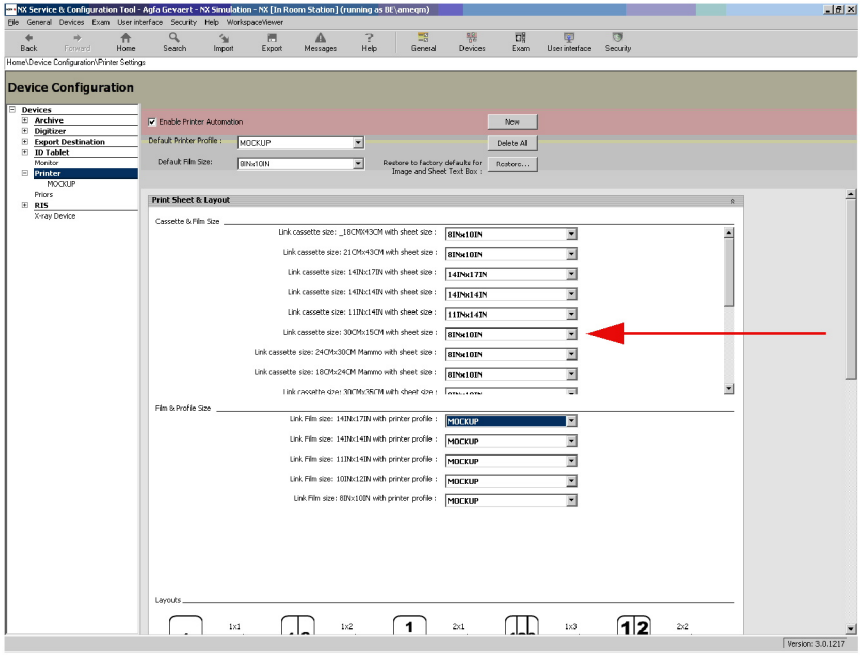


Figure 139: Configuring Printers page - Printer definition.

Managing Protocol Codes

Topics:

Importing Protocol Codes

The user can import a list with protocol codes in the NX Service and Configuration Tool. The protocol codes of that list can then be assigned to Exposure types, to Exposure groups or to Examination groups.

To import a list with protocol codes:

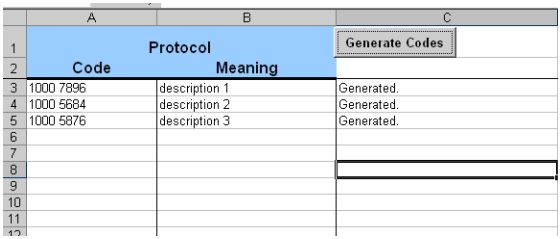
1. Click **Import protocol codes** in the main form.

   A Windows file selection dialog box appears.
2. Select the file with protocol codes and click **Import**.

Related Links

Adding new Protocol Codes on page 208

Importing

Import protocol codes	Select an xml file with protocol codes. The xml file can be generated with the Protocol code template in Microsoft Excel. (see Start Menu – Agfa- NX – Service – Install Tools – Protocol Code template (Excel2000 only).  **Figure 140: NX Service and Configuration Tool - Importing Protocol Codes** The imported protocol codes are added to the list of non-assigned protocol codes. Next step is to link or edit them manually.
Add exams	Select an xml file with previously exported exams (you cannot use a full export file here). Brings up a selection box with the exams available in the xml file from which you can select.

Linking Protocol Codes

This screen allows you to easily link protocol codes to

- an exposure type
- or an exam group
- or an exposure group

At the left side, only protocol codes are shown that are not yet linked.

To link a protocol code:

1. Select a protocol code and then select an exposure or an exam group or and exposure group.
2. Press the corresponding Link button at the top of the list.

Related Links

Automatic Selection of Exposure, Exam or Exposure group on page 125

Creation of new Exposure Groups

Also, new exposure groups can be created in this pane and immediately linked to protocol codes.

When more than one exposure from the exposure list is selected (use CTRL key), then an exposure creation dialog pops up when pressing the Link button.

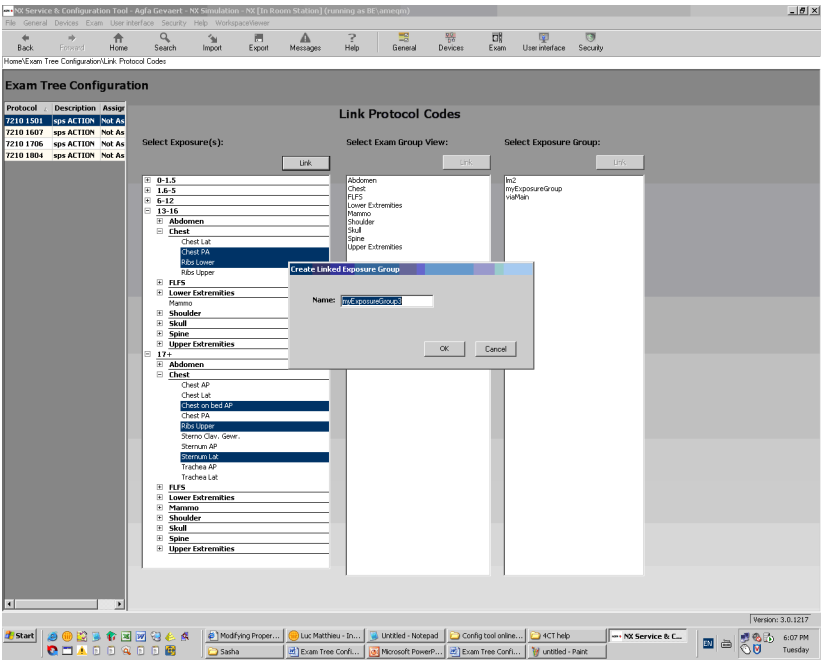


Figure 141: NX Service and Configuration Tool - Creating Exposure Groups

Enter a name and press OK to create a new exposure group. Further editing of this exposure group (including visibility in the Add Image pane on NX) can be done in the Edit exposure group pane.

Related Links

Configuring Exposure Groups on page 193

Adding new Protocol Codes

Apart from importing a file with protocol codes, the user can also add individual protocol codes to the Protocol Code list.

To add a new protocol code:

1. Click **Edit Protocol Codes** in the Exam Tree Configuration window.

   The Edit Protocol Codes main window appears.
2. Press the **New** button in the Edit Protocol Codes main window.

   The **Add Protocol Code** dialog box is displayed:

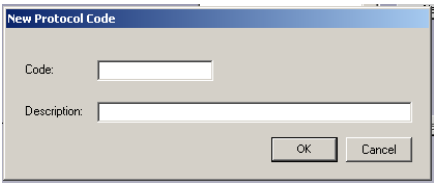


Figure 142: NX Service and Configuration Tool - Add New Protocol Code dialog box.

3. Enter the protocol code value and/or description.
4. Press **OK** to confirm your choice, otherwise click **Cancel**.

   If you have pressed OK the system adds the protocol code to the list.

Related Links

Importing Protocol Codes on page 205

Editing Protocol Codes

This screen allows you to create, load, edit and delete protocol codes.

At the left side of the screen, all protocol codes known to the system are shown. Unassigned codes are indicated ('Not Assigned').

Linking of unassigned protocol codes can also be done in the linking protocol code screen.

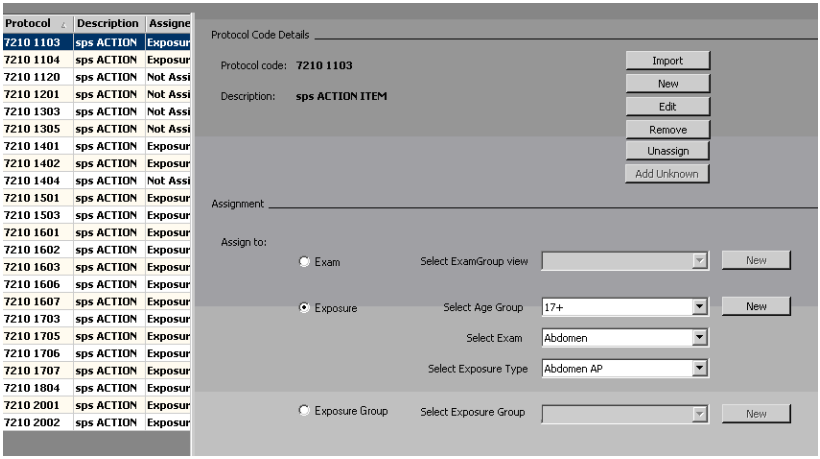
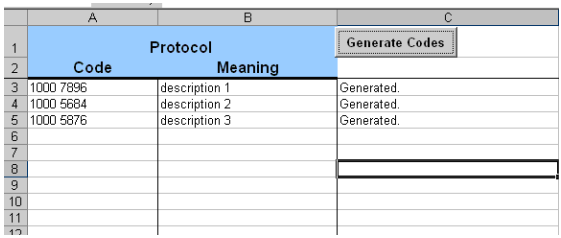


Figure 143: NX Service and Configuration Tool - Editing Protocol Codes

Import button	Load protocol codes from an xml file. The xml file can be generated with the Protocol code template in Microsoft Excel. (see Start Menu – Agfa- NX – Service – Install Tools – Protocol Code template (Excel2000 only).  **Figure 144: NX Service and Configuration Tool - Editing Protocol Codes**
New button	To enter a new protocol code

Edit button	To change name and or description of the selected protocol code
Remove button	To delete a protocol code and its links
Unassign button	To undo an assignment of a protocol code to an exposure, exam group or exposure group.
Add unknown button	NX keeps track of protocol codes received from the RIS during previous NX runs which are not assigned to an exposure yet (or exam group or exposure group). With this button, it is possible to add these to the protocol code list and assign them.

Related Links

Automatic Selection of Exposure, Exam or Exposure group on page 125
Linking Protocol Codes on page 205

Removing Protocol Codes

The user can remove individual protocol codes from the Protocol Code list.

To remove protocol codes:

1. Click **Edit Protocol Codes** in the Exam Tree Configuration window.

   The Edit Protocol Codes main window appears.
2. Select a protocol code from the Protocol Code list pane.

   The red box shows the position of the selected protocol code:
3. Press the **Remove** button in the Edit Protocol Codes main window.

   The system will display a warning message:

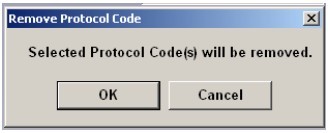


Figure 145: NX Service and Configuration Tool - Removing Protocol Codes

4. Press **OK** to confirm your choice, otherwise click **Cancel**.

   If you have pressed OK the system will remove the protocol code from the list.

Unassigning Protocol Codes

It is possible to undo an assignment of a protocol code.

To unassign protocol codes:

1. Click **Edit Protocol Codes** in the Exam Tree Configuration window.

   The Edit Protocol Codes main window appears.
2. Perform the following actions:

   - Select a protocol code from the Protocol Code list pane.
   - Click Unassign.
   - In the Confirm dialog, click Yes.

Adding Unknown Protocol Codes

It is possible that an examination with an unknown protocol code enters NX during the hospital workflow. Images with an unknown protocol code are marked with a question mark in the empty thumbnail.

You can decide to add the unknown protocol codes to the NX Service and Configuration Tool. When this is done, you can link these protocol to exposure types, exposure groups or examination groups.

To add unknown protocol codes:

1. Click **Edit Protocol Codes** in the Exam Tree Configuration window.

   The Edit Protocol Codes main window appears.
2. Click the **Add Unknown** button.

Related Links

Linking Protocol Codes on page 205

Exporting Protocol Codes

Click the link **Export protocol codes** to create an XML file containing the list of protocol codes.

Configuring the User Interface

Topics:

General Settings

In the NX Service and Configuration Tool General Settings User Interface Settings section, the user can configure the general look and feel settings of NX.

Topics:

NX Viewer Theme

The theme defines the color of the NX software.

- **Default**: let the installed licenses define the theme
- **Legacy**: green layout
- **Nice**: blue layout

Person Name Composition

For the available person names, the person name composition can be defined. A full name is composed of the elements:

- Prefix
- Last Name
- First Name
- Middle Name
- Suffix

The order of the full name elements is configured by selecting the values in the desired order from the drop-down boxes:

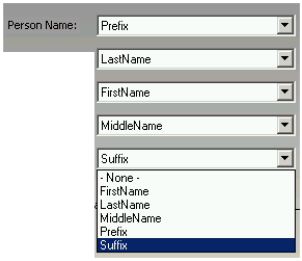


Figure 146: NX Service and Configuration Tool – Person Name Composition

The configured full name composition will be applicable for all available full name attributes:

- Patient name
- Birth name
- Operator name
- Referring Physician name
- Performing Physician name
- Requesting physician
- Operator name

The configured full name composition will be used within NX on locations where the full name is displayed, e.g.:

- Patient Switch

Figure 147: NX– Person Name Composition in the Patient Switch

- Grids as Worklist, Closed Exams List…

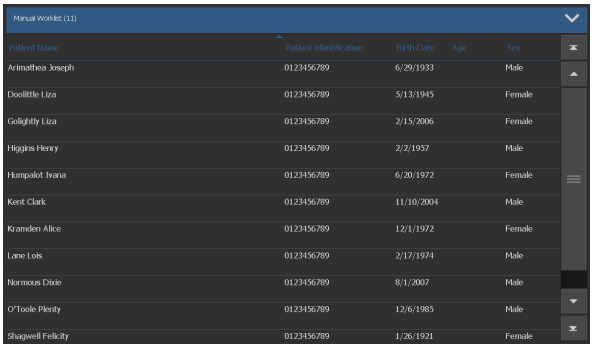


Figure 148: NX– Person Name Composition in the Worklist

Person Name Representation

For the available person names, the person name representation mode can be defined.

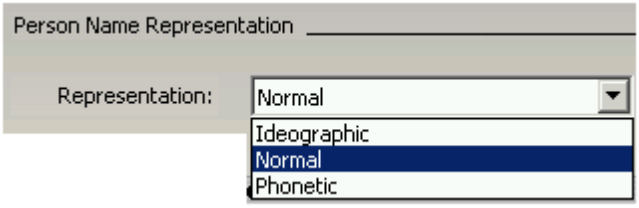


Figure 149: NX Service and Configuration Tool – Person Name Representation

From the drop-down box select one of these settings:

- Normal
- Ideographic
- Phonetic

The selected code set for the person name representation is dependent of the DICOM character set configuration in the Workstation Settings.

Note: *The Name Representation on a Central Monitoring System must be the same as on the in-room NX Workstations.*

Related Links

Workstation General Settings on page 40

Image Overview

In the Image Overview pane, the displayed attributes of the exposure and image thumbnails can be configured.

Figure 150: NX Service and Configuration Tool – Image Overview pane

The exposure and image thumbnails are displayed throughout the application in the NX image overview pane:

Figure 151: NX– Image Overview pane

For the exposure thumbnails up to three attributes can be configured for display. For the image thumbnails up to four attributes can be configured for display.

Note: It is possible to leave values blank, thereby allowing spatial configuration of the attributes.

Current Patient Switch

The “Current Patient Switch” pane allows the configuration of the Examination environment patient switch.

Figure 152: NX Service and Configuration Tool – Current Patient Switch pane

The displayed patient name(s) composition is defined within this section of the NX Service and Configuration Tool.

The displayed patient name consists by default of the configured name representation “Person Name Configuration” optionally appended with one of the following options:

- Patient Birth Date

  The patient birth date is displayed in the configured regional settings format of NX.
- Patient Identification

  The Patient Identification is displayed.
- Patient Location

  The Patient Switch displays where the patient is located in the hospital.
- Exam
- <# images available/# planned exposures>

  “# images available” refers to the amount of received images, and “# planned exposures” to the amount of exposures identified but for which no image was received yet from the Digitizer.
- Room (Central Monitoring System only)

  The Patient Switch displays the name of the NX workstation where the exam is performed.
- Combined Options

  It is possible to combine multiple options, e.g. Patient Birth Date & Exam:

Related Links

Person Name Representation on page 220
Regional Settings on page 43

Configuring External Applications

It is possible to configure additional NX action buttons, from which external applications can be launched or be brought to the foreground when already running.

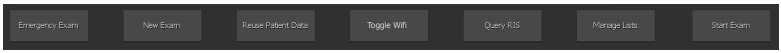


Figure 153: NX - Worklist Environment Action Buttons

Note: *For Central Monitoring System it is not possible to configure an external application for the Worklist environment.*

To enable an action button for an NX environment:

1. Go to the General Settings section of the NX Service and Configuration Tool User Interface Configuration section.
2. Check the checkbox next to the preferred environment.
3. Supply a caption for the action button.

   The supplied caption will be displayed on the button in NX.
4. Define the application linked with the action button.
5. To configure the application linked with the additional action button, the user can manually supply the path to the executable file or browse to the file by pressing the browse button.

   It is also possible to configure a path pointing to a data file. When the additional action button is triggered in NX, the application associated with the file will be launched, opening the configured file.

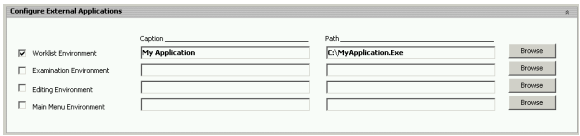


Figure 154: NX Service and Configuration Tool – Enabled action button for the Worklist Environment

6. Check the preview of the button that is available in the action button overview, by clicking on the NX environment link next to the checkbox. (This overview is not applicable for the Main Menu Environment).

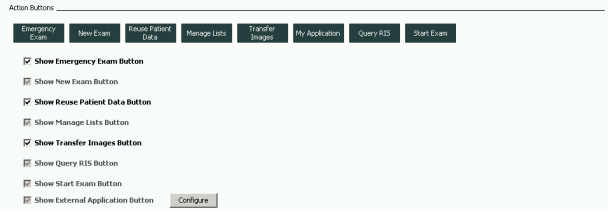


Figure 155: NX Service and Configuration Tool – Enabled action button for the Worklist Environment

Note: The presence of this action button can not be toggled from the action button overview pane.

Note: The order of the action buttons is fixed.

7. Click on the "Configure" button to navigate back to the "Configure External Applications" pane.

   In NX the additional action button will be displayed as configured.

Worklist Settings

In the NX Service and Configuration Tool Worklist environment User Interface Settings section, the user can configure the look and feel of the NX Worklist Environment.

Topics:

General Settings

In the General Settings pane, the presence of the manual worklist and the action buttons can be configured for the NX Worklist environment.

Topics:

Manual Worklist

By checking or un-checking the manual worklist checkbox, the presence of the manual worklist in the NX Worklist environment is toggled.

Figure 156: NX Service and Configuration Tool – Manual Worklist configuration

When the manual worklist option is enabled, the worklist will thus be present in the worklist environment.

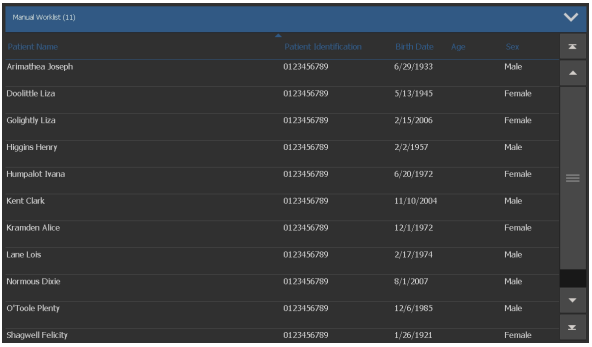


Figure 157: NX– Manual Worklist

It will further be possible to manage the manual worklist through the manage lists functionality:

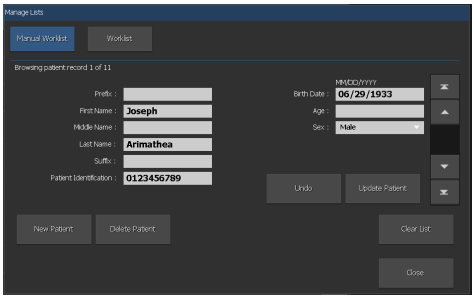


Figure 158: NX– Manage Lists, Manual Worklist

Action Buttons

Within the Action Buttons section, the presence of the action buttons in the NX Worklist environment is toggled.

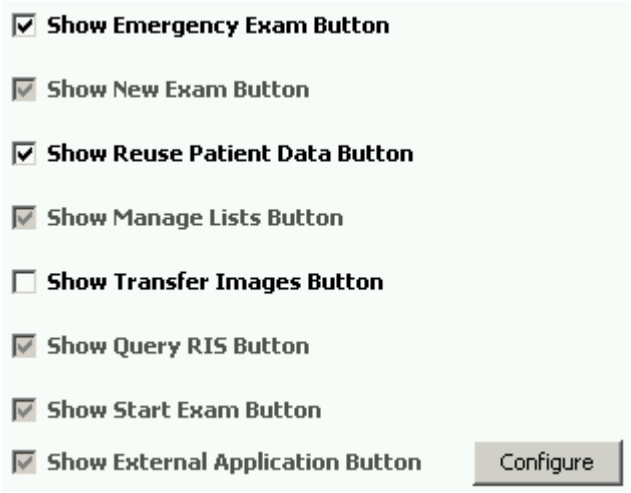


Figure 159: NX Service and Configuration Tool – Action Buttons configuration

The action buttons preview allows a visual inspection of the action buttons as they will be presented in NX.

Figure 160: NX Service and Configuration Tool – Action Buttons preview

From this preview the caption and order of the action buttons can be inspected.

Note: *The order of the actions buttons is fixed*

To enable the presence of an action button in an environment, it is sufficient to check the checkbox of the corresponding action button.

When an action button is enabled, it will be displayed in an enabled state (green) in the action button preview. If an action button is disabled, it will be displayed in a disabled state (white) in the action button preview.

The presence of some action buttons can not be toggled. Therefore the checkboxes to enable or disable these buttons are grayed out.

Action Button	Configurable	Rationale
Show Emergency Exam Button	Yes	
Show New Exam Button	No	It should always be possible to manually start an exam on an NX workstation. Therefore the presence of this action button is mandatory.
Show Reuse Patient Data Button	Yes	
Show Manage Lists Button	No	It should always be possible to manage either the worklist or the manual worklist. Therefore the presence of this action button is mandatory.
Show Transfer Images Button	Yes	
Show Query RIS Button	No	The presence of this button is determined by the presence of the RIS license. If no RIS license is present, the action button will not be enabled.
Show Start Exam Button	No	It should always be possible to start an exam (RIS exam or manual exam) from the worklist environment.
Show External Application Button	No	The presence of this action button is determined by the configuration in the “Configure External Applications” pane. Refer to “Configuring External Applications” .

Related Links

Configuring External Applications on page 223

Worklist

In the Worklist pane, the worklist layout can be configured for the NX Worklist environment.

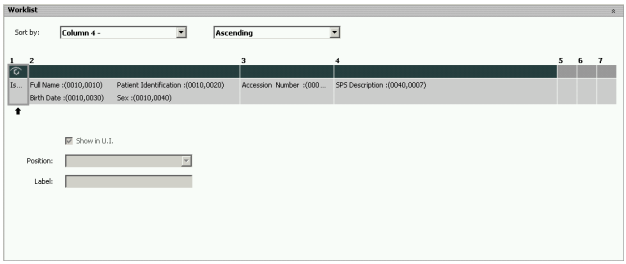


Figure 161: NX Service and Configuration Tool – Configure Worklist

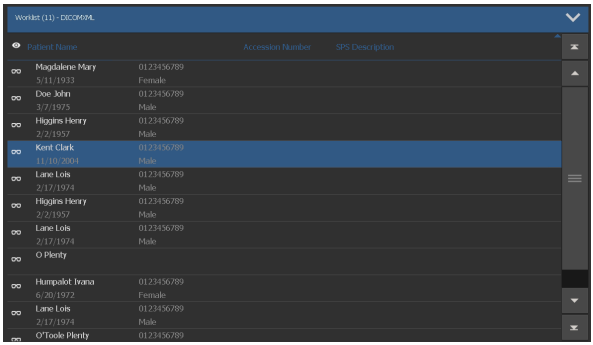


Figure 162: NX– Worklist

Topics:

Content

The first column (“Open Session Indicator”) is fixed. Neither the content nor the visibility can be toggled for this column.

For the six other columns the content can be defined by the user.

Per column, it is possible to configure up to four attributes for display:

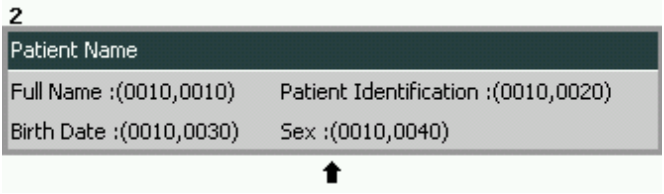


Figure 163: NX Service and Configuration Tool – Configure column contents

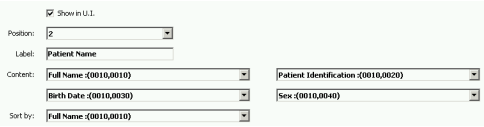


Figure 164: NX Service and Configuration Tool – Configure column contents

The visibility of the column is toggled by checking or un-checking the checkbox. This extra visibility toggle allows easier customization of imported default configurations by making not desired columns invisible.

Column positions can be easily switched by selecting another position from the position drop-down box. The contents of the cells will be swapped.

A column label can be supplied.

Since a single entry in a column can contain up to four attributes, a sorting field must be assigned for when the column is sorted (ascending or descending). This is done by selecting one of the four selected attributes in the “Sort By” column.

Sorting

For the whole worklist, the default sorting column and mode can be configured by selecting the desired values from the drop-down box.

The worklist will be sorted by the column defined in the “Sort By” drop-down box, in the configured mode.

Closed Exams

In the Closed Exams pane, the closed exams list layout can be configured for the NX Worklist environment.

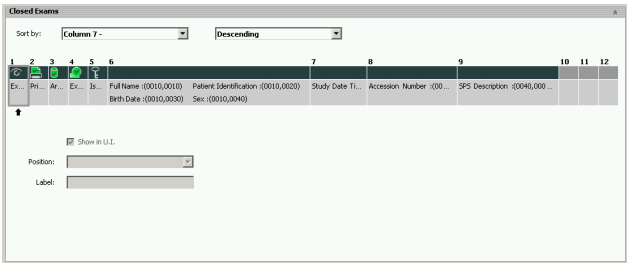


Figure 165: NX Service and Configuration Tool – Configure Closed Exams List

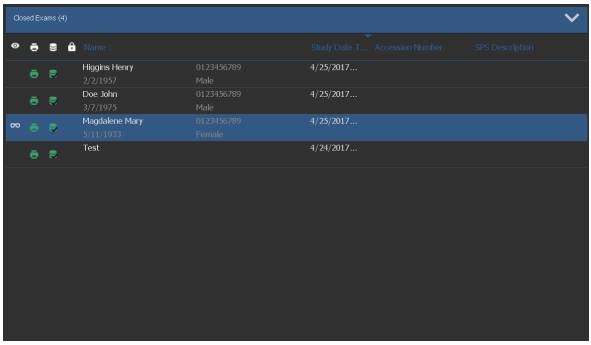


Figure 166: NX– Worklist

Topics:

- *Content*
- *Sorting*

Content

The first six columns:

- Open Session Indicator
- Print Automation
- Archive Automation
- Export Automation
- Dose Structured Report Export Automation Status
- Lock Sessions

are fixed. Neither the content nor the visibility can be toggled for these columns.

The automation columns are only visible if the automation functionality is enabled.

For the seven other columns the content can be defined by the user.

Per column, it is possible to configure up to four attributes for display:

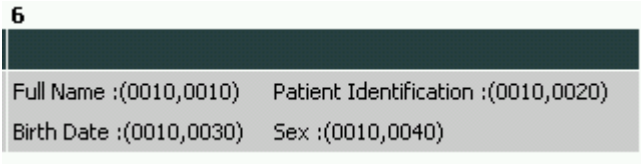


Figure 167: NX Service and Configuration Tool – Configure column contents

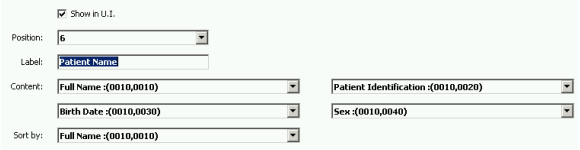


Figure 168: NX Service and Configuration Tool – Configure column contents

The visibility of the column is toggled by checking or un-checking the checkbox. This extra visibility toggle allows easier customization of imported default configurations by making not desired columns invisible.

Column positions can be easily switched by selecting another position from the position drop-down box. The contents of the cells will be swapped.

A column label can be supplied.

Since a single entry in a column can contain up to four attributes, a sorting field must be assigned for when the column is sorted (ascending or descending). This is done by selecting one of the four selected attributes in the “Sort By” column.

Sorting

For the whole Closed Exams list, the default sorting column and mode can be configured by selecting the desired values from the drop-down box.

The Closed Exams list will be sorted by the column defined in the “Sort By” drop-down box, in the configured mode.

Search

(Central Monitoring System Only!)

In the Search pane, the search list layout can be configured for the CMS NX Worklist environment.

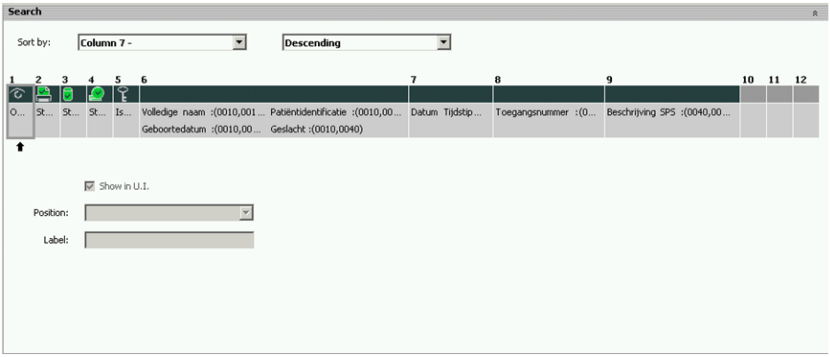


Figure 169: NX Service & Configuration Tool – Configure CMS Search List.

Figure 170: NX– Search list

Topics:

- *Content*
- *Sorting*

Content

The first column, Open Session Indicator, is fixed. Neither the content nor the visibility can be toggled for this column.

For the following four columns the visibility can be toggled.

- Print Automation
- Archive Automation
- Export Automation
- Lock Sessions

For the seven other columns the content can be defined by the user.

Per column, it is possible to configure up to four attributes for display:

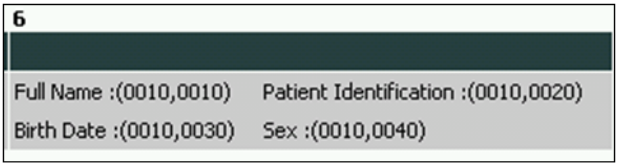


Figure 171: NX Service & Configuration Tool – Configure column contents

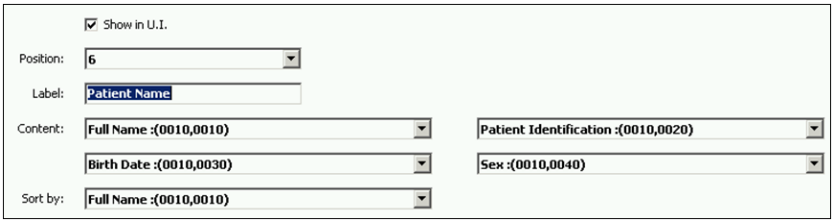


Figure 172: NX Service & Configuration Tool – Configure column contents

The visibility of the column is toggled by checking or un-checking the checkbox. This extra visibility toggle allows easier customization of imported default configurations by making not desired columns invisible.

Column positions can be easily switched by selecting another position from the position drop-down box. The contents of the cells will be swapped.

A column label can be supplied.

Since a single entry in a column can contain up to four attributes, a sorting field must be assigned for when the column is sorted (ascending or descending). This is done by selecting one of the four selected attributes in the "Sort By" column.

Sorting

For the whole Search list, the default sorting column and mode can be configured by selecting the desired values from the drop-down box.

Figure 173: Default Sorting Column

The Search list will be sorted by the column defined in the "Sort By" drop-down box, in the configured mode.

Acquisition Settings

In the NX Service and Configuration Tool Acquisition environment User Interface Settings section, the user can configure the look and feel of the NX Acquisition Environment.

Topics:

- *General Settings*
- *Acquisition Details*
- *Status Box*
- *Tools & Annotations*

General Settings

In the General Settings pane, the presence of the action buttons can be configured for the NX Acquisition environment.

Within the Action Buttons section, the presence of the action buttons in the NX Acquisition environment is toggled.

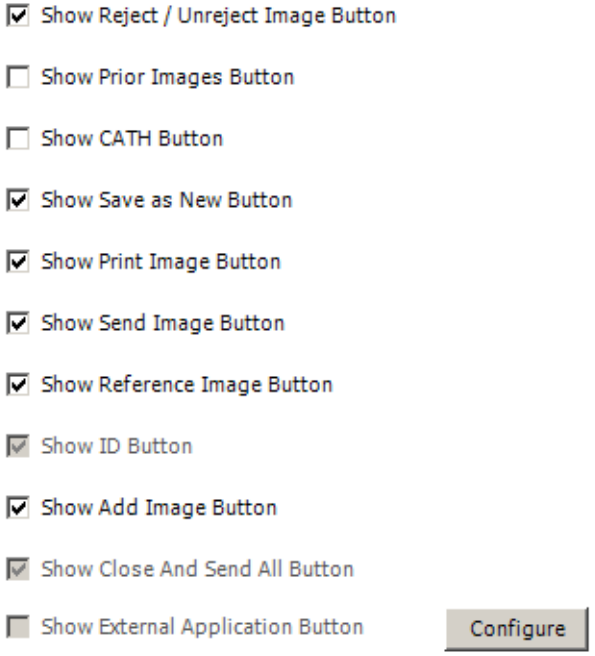


Figure 174: NX Service and Configuration Tool – Action Buttons configuration

The action buttons preview allows a visual inspection of the action buttons as they will be presented in NX.

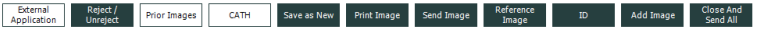


Figure 175: NX Service and Configuration Tool – Action Buttons preview

From this preview the caption and order of the action buttons can be inspected.

Note: *The order of the actions buttons is fixed.*

To enable the presence of an action button in an environment, it is sufficient to check the checkbox of the corresponding action button.

When an action button is enabled, it will be displayed in an enabled state (green) in the action button preview. If an action button is disabled, it will be displayed in a disabled state (white) in the action button preview.

The presence of some action buttons can not be toggled. Therefore the checkboxes to enable or disable these buttons are grayed out.

Action Button	Configurable	Rationale
Show Reject/Unreject Image Button	Yes	
Show Prior Images Button	Yes	
Show CATH Button	Yes	
Show Save as New Button	Yes	
Show Print Image Button	Yes	
Show Send Image Button	Yes	
Show Reference Image Button	Yes	
Show ID Button	No	It should always be possible to identify an exposure, therefore the presence of this action button is mandatory.
Show Add Image Button	Yes	
Show External Application Button	No	The presence of this action button is determined by the configuration in the “Configure External Applications” pane.

Acquisition Details

Within the Acquisition Details pane, the layout of the information can be configured that is displayed in the four corners of the image in the Dynamic Image pane.

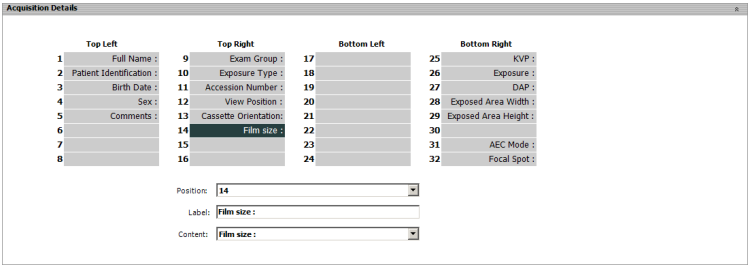


Figure 176: NX Service and Configuration Tool – Configure Acquisition Details pane

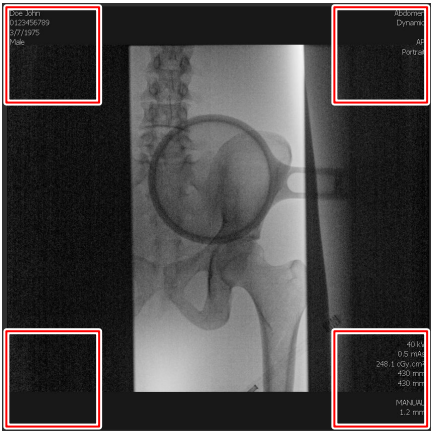


Figure 177: NX – Dynamic Image pane

Up to 8 attributes can be configured for display in each corner.

To configure an attribute, an entry is selected from the “Content” drop-down box after having selected a target field. This can be done by clicking on a field in the overview, or by selecting a field from the “Position” drop-down box.

After having selected an attribute from the “Content” drop-down box, a custom label can be provided next to the default presented label.

Configured attributes positions can be easily switched by selecting another position from the position drop-down box. The contents of the positions will be swapped.

Status Box

In the Status Box configuration section, the contents of the NX Status Box can be configured. The status box is displayed next to the Dynamic Image pane in the NX Acquisition environment.

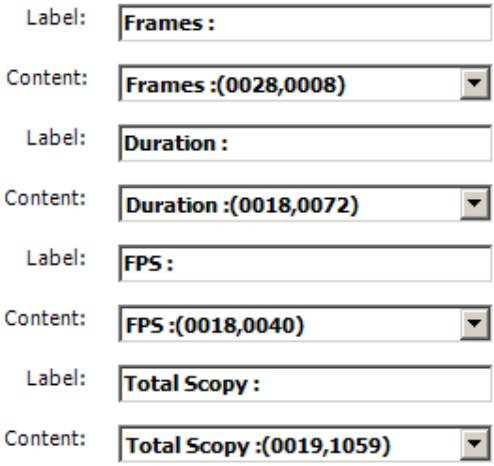


Figure 178: NX Service and Configuration Tool – Status Box configuration

The Status Box can display up to four parameters.

For every parameter, a user-defined label can be provided which will be used for display in the NX Status Box:

Figure 179: NX Status Box

Tools & Annotations

In the Tools & Annotations pane, the available NX Acquisition environment (annotation) tools can be configured.

For every available (annotation) tool, the presence of the corresponding button can be toggled by checking or un-checking the corresponding checkbox.

Related Links

Selection Palette on page 260
Annotations Palette on page 260
Transformation Palette on page 264
View Palette on page 265
Image Processing Palette on page 267

Examination Settings

In the NX Service and Configuration Tool Examination environment User Interface Settings section, the user can configure the look and feel of the NX Examination Environment.

Topics:

General Settings

In the General Settings pane, the presence of the action buttons can be configured for the NX Examination environment.

Within the Action Buttons section, the presence of the action buttons in the NX Examination environment is toggled.

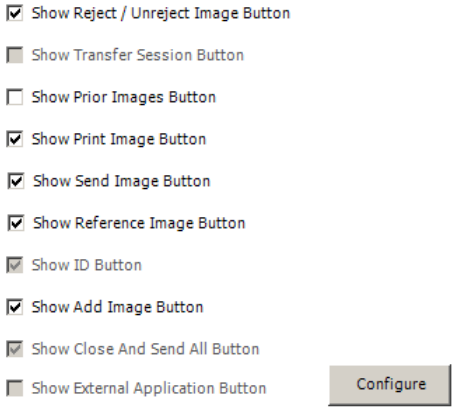


Figure 180: NX Service and Configuration Tool – Action Buttons configuration

The action buttons preview allows a visual inspection of the action buttons as they will be presented in NX.

Figure 181: NX Service and Configuration Tool – Action Buttons preview

From this preview the caption and order of the action buttons can be inspected.

Note: *The order of the actions buttons is fixed.*

To enable the presence of an action button in an environment, it is sufficient to check the checkbox of the corresponding action button.

When an action button is enabled, it will be displayed in an enabled state (green) in the action button preview. If an action button is disabled, it will be displayed in a disabled state (white) in the action button preview.

The presence of some action buttons can not be toggled. Therefore the checkboxes to enable or disable these buttons are grayed out.

Action Button	Configurable	Rationale
Show Reject/Unreject Image Button	Yes	
Show Prior Images Button	Yes	
Show Print Image Button	Yes	
Show Send Image Button	Yes	
Show Reference Image Button	Yes	
Show ID Button	No	It should always be possible to identify an exposure, therefore the presence of this action button is mandatory.
Show Add Image Button	Yes	
Show External Application Button	No	The presence of this action button is determined by the configuration in the “Configure External Applications” pane.

XRG Parameters

Within the XRG Parameters pane, the layout of the XRG pane in the NX Examination environment can be configured.

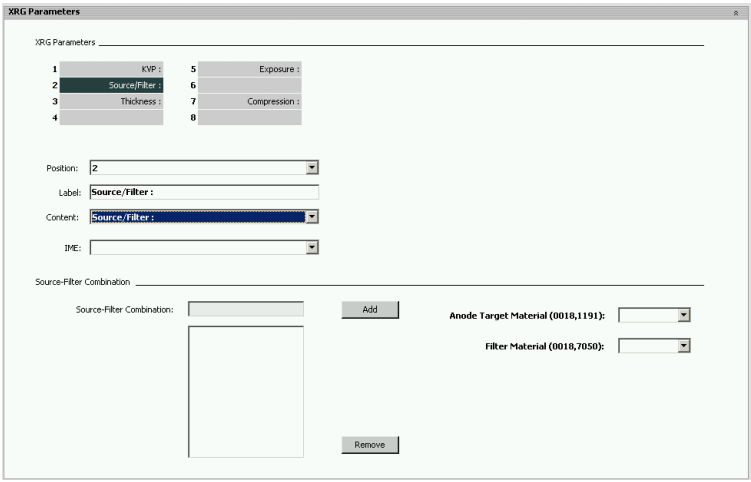


Figure 182: NX Service and Configuration Tool – Configure XRG Parameters

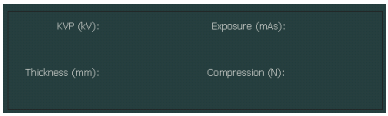


Figure 183: NX– Examination XRG Parameters

Up to eight attributes can be configured for display.

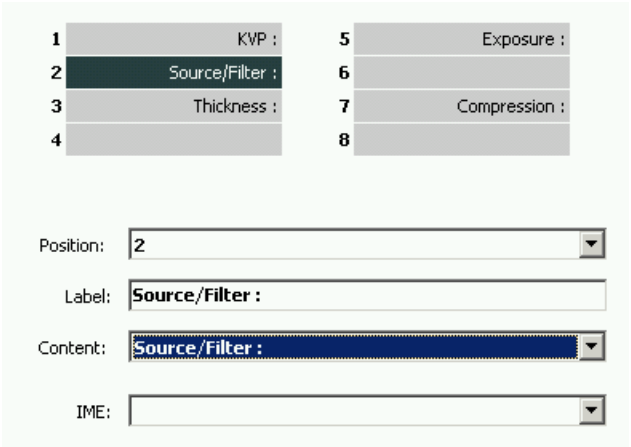


Figure 184: NX Service and Configuration Tool – Configure XRG Parameters

To configure an attribute, an entry is selected from the “Content” drop-down box after having selected a target field. This can be done by clicking on a field in the overview, or by selecting a field from the “Position” drop-down box.

After having selected an attribute from the “Content” drop-down box, a custom label can be provided next to the default presented label.

Configured attributes positions can be easily switched by selecting another position from the position drop-down box. The contents of the positions will be swapped.

In case of run-time user editable fields, the IME (Input Method Editor) can also be defined.

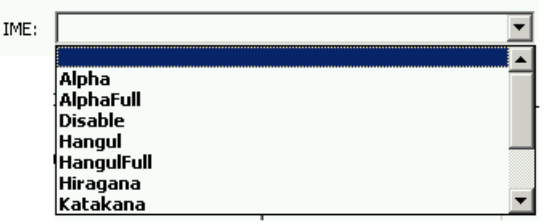


Figure 185: NX Service and Configuration Tool – IME selection drop-down box

The IME selection is dependent of the DICOM character set configuration in the Workstation Settings.

For the attribute “Source/Filter”, an additional configuration section is available.

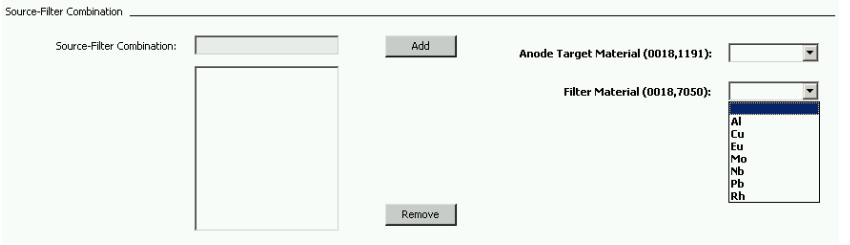


Figure 186: NX Service and Configuration Tool – Source-Filter Combination configuration

Within the Source-Filter configuration section, the values presented in the Source-Filter drop-down in NX can be configured.

The list of Source-Filter combinations is populated by selection a value for the DICOM attribute “Anode Target Material”, followed by selecting a value for the DICOM attribute “Filter Material”. The selection should be confirmed by pressing the “Add” button.

By pressing the “Remove” button, a selected Source-Filter combination can be deleted.

Related Links

Workstation General Settings on page 40

View Patient

Within the View Patient pane, the layout of the View Patient Details pane in the NX Examination environment can be configured.

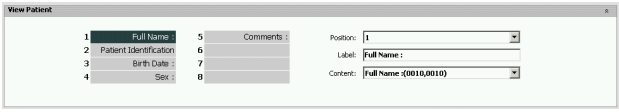


Figure 187: NX Service and Configuration Tool – Configure View Patient pane

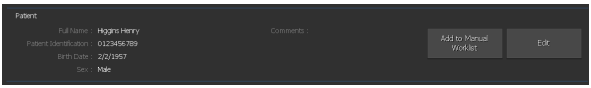


Figure 188: NX – Patient pane

Up to eight attributes can be configured for display.

To configure an attribute, an entry is selected from the “Content” drop-down box after having selected a target field. This can be done by clicking on a field in the overview, or by selecting a field from the “Position” drop-down box.

After having selected an attribute from the “Content” drop-down box, a custom label can be provided next to the default presented label.

Configured attributes positions can be easily switched by selecting another position from the position drop-down box. The contents of the positions will be swapped.

Edit Patient

Within the Edit Patient pane, the layout of the Edit Patient Details pane in the NX Examination environment can be configured.

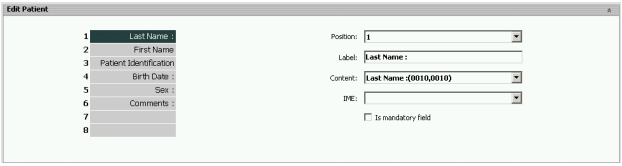


Figure 189: NX Service and Configuration Tool – Configure Edit Patient pane

Figure 190: NX – Edit Patient pane

Up to eight attributes can be configured for editing.

To configure an attribute, an entry is selected from the “Content” drop-down box after having selected a target field. This can be done by clicking on a field in the overview, or by selecting a field from the “Position” drop-down box.

After having selected an attribute from the “Content” drop-down box, a custom label can be provided next to the default presented label.

For every configured attribute the “Is Mandatory” checkbox can be checked optionally. This action makes providing a value for the attribute mandatory in NX. In NX, mandatory fields are indicated by an asterisk (*) next to the field.

Configured attributes positions can be easily switched by selecting another position from the position drop-down box. The contents of the positions will be swapped.

In case of run-time user editable fields, the IME (Input Method Editor) can also be defined.

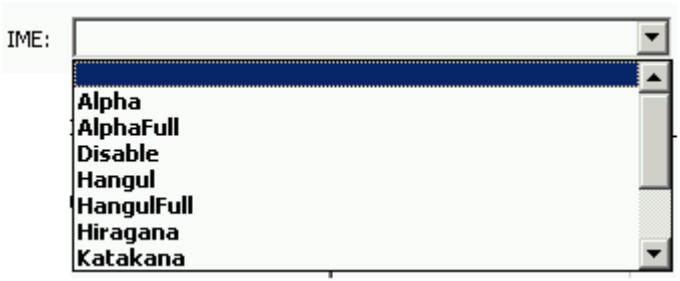


Figure 191: NX Service and Configuration Tool – IME selection drop-down box

The IME selection is dependent of the DICOM character set configuration in the Workstation Settings.

Related Links

Workstation General Settings on page 40

View Image Details

Within the View Image Details pane, the layout of the View Image Details pane in the NX Examination environment can be configured.

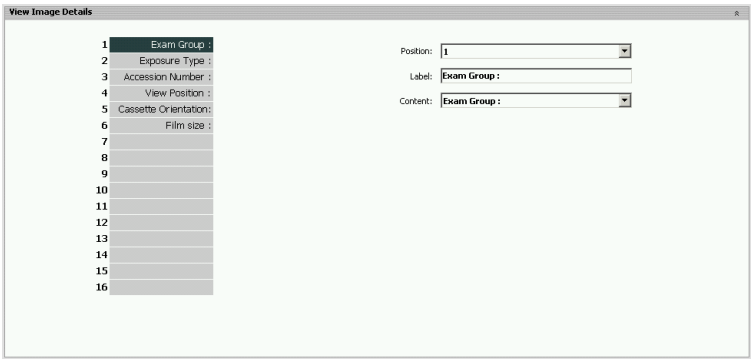


Figure 192: NX Service and Configuration Tool – Configure View Image Details pane

Figure 193: NX – Image Details pane

Up to 16 attributes can be configured for display.

To configure an attribute, an entry is selected from the “Content” drop-down box after having selected a target field. This can be done by clicking on a field in the overview, or by selecting a field from the “Position” drop-down box.

After having selected an attribute from the “Content” drop-down box, a custom label can be provided next to the default presented label.

Configured attributes positions can be easily switched by selecting another position from the position drop-down box. The contents of the positions will be swapped.

Edit Image Details

Within the Edit Image Details pane, the layout of the Edit Image Details pane in the NX Examination environment can be configured.

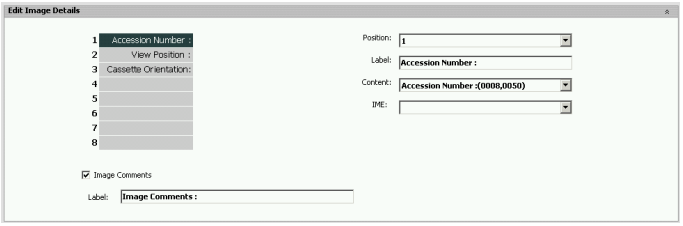


Figure 194: NX Service and Configuration Tool – Configure Edit Image Details pane

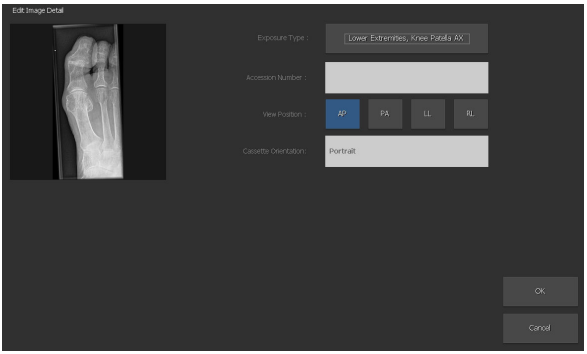


Figure 195: NX– Image Details pane

Up to eight attributes can be configured for editing.

To configure an attribute, an entry is selected from the “Content” drop-down box after having selected a target field. This can be done by clicking on a field in the overview, or by selecting a field from the “Position” drop-down box.

After having selected an attribute from the “Content” drop-down box, a custom label can be provided next to the default presented label.

Configured attributes positions can be easily switched by selecting another position from the position drop-down box. The contents of the positions will be swapped.

In case of run-time user editable fields, the IME (Input Method Editor) can also be defined.

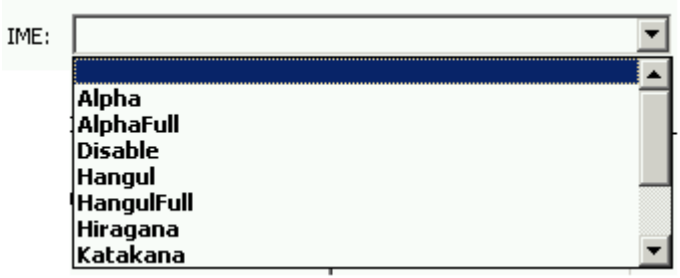


Figure 196: NX Service and Configuration Tool – IME selection drop-down box

The IME selection is dependent of the DICOM character set configuration in the Workstation Settings.

For the attribute “Image Comments”, an additional configuration element is available. To make the image comments, configured in the General Configuration section Predefined Lists, available in NX, the checkbox must be checked.

A user defined label can additionally be supplied.

Figure 197: NX Service and Configuration Tool – Image Comment attribute configuration

Related Links

Workstation General Settings on page 40
Predefined Lists on page 46

Compose Exam

Within the Compose Exam pane, the layout of the Add Image pane in the NX Examination environment can be configured.

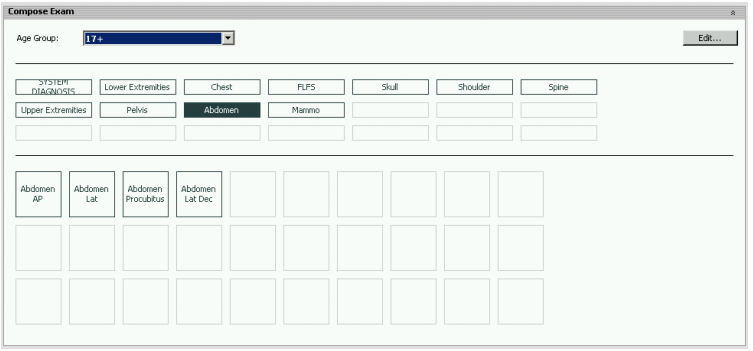


Figure 198: NX Service and Configuration Tool – Compose Exam pane

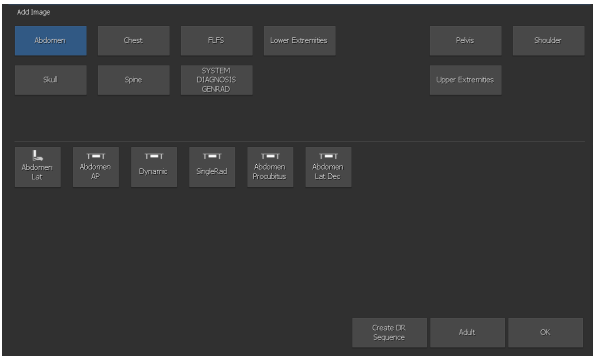


Figure 199: NX– Add Image pane

The availability of items in the Compose Exam pane is dependent of some factors:

- When no pediatric license is enabled, the “Patient Category” drop-down box will only contain the adult patient category.
- When an exam or exposure type does not have its visibility flag enabled, it will not be available in the Compose Exam pane.

As a shortcut, the “Edit…” button provides quick access to the Exam Tree.

To define the layout of the Add Image pane, the exam and exposure type/group buttons can be dragged and dropped to the desired location. The available exposure types/groups depend on the selected exam group.

When a location is unavailable, the position will be indicated in grey.

Related Links

Configuring Examination Groups on page 165

Tools & Annotations

Within the Tools & Annotations pane, the layout of the NX Examination environment toolbox can be configured.

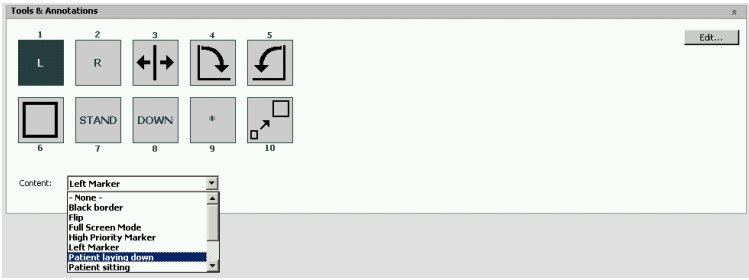


Figure 200: NX Service and Configuration Tool – Tools & Annotations pane

Figure 201: NX– Examination environment Toolbox

Up to ten Tools can be selected from the “Contents” drop-down box.

The “Contents” drop-down box is populated by the configured Custom Markers. The “Edit…” button allows quick access to this configuration section.

Additionally the following Tools are available:

- Black Border
- Flip
- Full Screen Mode
- Rotate clockwise
- Rotate counter clockwise
- Freehand rotate

It is also possible not to configure a specific button by selecting the entry “- None -” from the content drop-down box.

Editing Settings

In the NX Service and Configuration Tool Editing environment User Interface Settings section, the user can configure the look and feel of the NX Editing Environment.

Topics:

- *Softcopy & Print View*
- *Tools & Annotations*

General Settings

In the General Settings pane, the Editing environment view mode options and action buttons can be configured for the NX Editing environment.

Topics:

View Mode

The NX Editing environment consists of two view modes:

- Softcopy View
- Print View

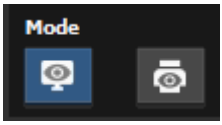
Figure 202: NX Service and Configuration Tool – View Mode options

The default view mode of the Editing environment can be configured by selecting the corresponding option:

Caption	Function
Show images by default in normal mode	The first time an image is viewed in the NX Editing environment, it will be displayed by default in the Softcopy View mode.
Show images by default in print mode	The first time an image is viewed in the NX Editing environment, it will be displayed by default in the Print View mode.

In case the system will be used in one view mode exclusively, it is not necessary to be able to switch between view modi. For this situation, the possibility is offered to disable the presence of the view mode toggle button:

Caption	Function
Show Normal Mode/Print Mode Toggle Button = ON	The view mode toggle button is displayed in the NX Editing Environment:

	
Show Normal Mode/Print Mode Toggle Button = OFF	The view mode toggle button is not displayed in the NX Editing Environment.

The NX Editing environment can be configured for use with touch screen. This affects the behaviour of the left toolbar and the button functions.

Caption	Function
Enable touch mode	This affects the behaviour of the left toolbar and the button functions.

Note: Depending on the configuration, this option may be unavailable and touch mode may be enabled by default.

On a system with dynamic imaging, the Editing environment is only useful for printing. If no printing is done, the Editing environment can be hidden.

Caption	Function
Enable Editing Environment	Disable the checkbox to hide the Editing environment in the NX software.

Action Buttons

Within the Action Buttons section, the presence of the action buttons in the NX Editing environment is toggled.

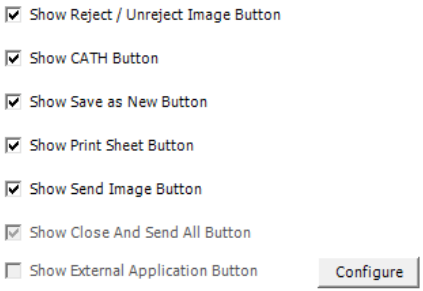


Figure 203: NX Service and Configuration Tool – Action Buttons configuration

The action buttons preview allows a visual inspection of the action buttons as they will be presented in NX.

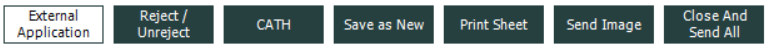


Figure 204: NX Service and Configuration Tool – Action Buttons preview

From this preview the caption and order of the action buttons can be inspected.

To enable the presence of an action button in an environment, it is sufficient to check the checkbox of the corresponding action button.

When an action button is enabled, it will be displayed in an enabled state (green) in the action button preview. If an action button is disabled, it will be displayed in a disabled state (white) in the action button preview.

The presence of some action buttons can not be toggled. Therefore the checkboxes to enable or disable these buttons are grayed out.

Action Button	Configurable	Rationale
Show Reject/Unreject Image Button	Yes	
Show CATH Button	Yes	
Show Save as New Button	Yes	
Show Print Button	Yes	
Show Send Image Button	Yes	
Show Send Image Button	Yes	
Show External Application Button	No	The presence of this action button is determined by the configuration in the “Configure External Applications” pane.

Softcopy & Print View

In the Softcopy & Print View pane, the presence of the true scale factor and the Status Box can be configured for the NX Editing environment.

Topics:

- *True Scale factor*
- *Status Box*

True Scale factor

When an image is viewed in Print View mode in the NX Editing environment, it is possible to display the scaling factor.

Figure 205: NX Service and Configuration Tool – True Scale factor configuration

When the option “Show true scale factor (print view)” is enabled, the scale factor of the image can be inspected in the NX Editing environment Status Box.

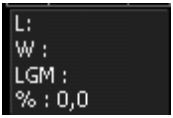
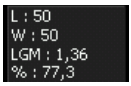
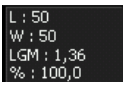
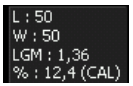


Figure 206: NX– True Scale factor indication

The scale factor can be divided in three main types:

- True size: When the scaling factor of an image is set to “True Size”, the displayed true scale factor will be “100%”.
- Best Fit: When the scaling factor of an image is set to “Best Fit”, the displayed true scale factor will be equal to the scaling factor applied to the image.
- Calibrated scale factor: When the calibration tool has been used for calibrating a distance measurement, a calibration indication (“CAL”) will be displayed next to the true sale factor.

Scale Mode	Best Fit	True Size	Calibrated
Example			

Status Box

In the Status Box configuration section, the contents of the NX Status Box can be configured. The status box is displayed in both view modi of the NX Editing environment. The Status Box configuration applies to both NX View modi.

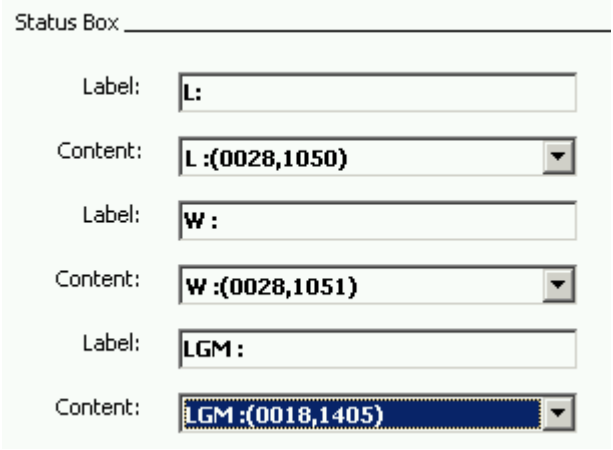


Figure 207: NX Service and Configuration Tool – Status Box configuration

The Status Box can display up to four parameters. The available parameters are:

- Window Width (0028,1051)
- Window Centre (0028,1050)
- LGM (0018,1405)
- EI
- DI

For every parameter, a user-defined label can be provided which will be used for display in the NX Status Box:

Figure 208: NX Status Box

Tools & Annotations

In the Tools & Annotations pane, the available NX Editing environment (annotation) tools can be configured.

For every available (annotation) tool, the presence of the corresponding button can be toggled by checking or un-checking the corresponding checkbox.

Related Links

Custom Markers on page 48

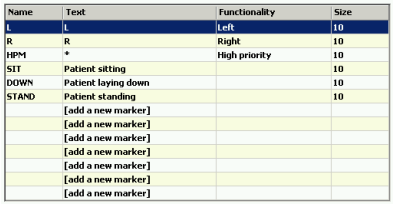
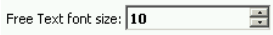
Topics:

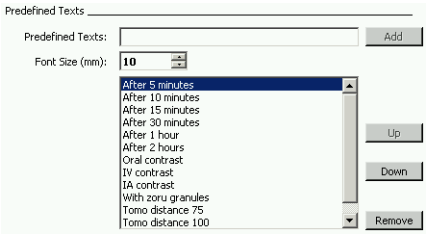
Selection Palette

Item	NX Control	Remark
Delete		The button is enabled in the NX Editing environment when an annotation is selected.
Select		The select function can be used to exit a selected annotation function and to return to selection mode.
Revert to Original		The “Revert to Original’ functionality is used to undo all changes applied to the image using the Tools & Annotations pane.

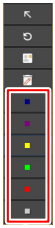
Annotations Palette

Item	NX Control	Remark
Left Marker		When the “Left Marker” checkbox is checked, the Left Marker functionality will be available as a separate button in the NX Editing environment toolbox. The left marker is also available as a custom marker within the Custom Markers drop-down box.
Right Marker		When the “Right Marker” checkbox is checked, the Right Marker functionality will be available as a separate button in the NX Editing environment toolbox.

		The right marker is also available as a custom marker within the Custom Markers drop-down box.
Custom Marker		When the “Custom Markers” checkbox is checked, the defined custom markers will be displayed in the a drop-down box. The custom markers are defined in the “Custom Markers” pane of the General Settings section: 
Free Text		When the “Free Text” checkbox is checked, it will be possible to add a free text annotation to an image. The default size of the free text annotation can be set in the “Image Presentation” pane of the Workflow Management section: 
Predefined Text		When the “Predefined Text” checkbox is checked, it will be possible to add a predefined text annotation to an image. The predefined text annotations can be set in the “Predefined lists” pane of the General Settings section:

		
Arrow		When the “Arrow” checkbox is checked, it will be possible to add an arrow annotation to an image. When adding an arrow annotation to an image, it will also be possible to add a custom text annotation.
Rectangle		When the “Rectangle” checkbox is checked, it will be possible to add a rectangle annotation to an image. When adding a rectangle annotation to an image, an area measurement will be displayed along.
Circle		When the “Circle” checkbox is checked, it will be possible to add a circle annotation to an image. When adding a circle annotation to an image, an area and diameter measurement will be displayed along.
Polygon		When the “Polygon” checkbox is checked, it will be possible to add a polygon annotation to an image. When adding a polygon annotation to an image, an area measurement will be displayed along.
Freehand		When the “Freehand” checkbox is checked, it will be possible to add a freehand annotation to an image. When adding a freehand annotation to an image, an area measurement will be displayed along.

Perpendicular		When the “Perpendicular” checkbox is checked, it will be possible to add a perpendicular annotation to an image.
Line		When the “Line” checkbox is checked, it will be possible to add a line annotation to an image.
Rectangle SAL		When the “Rectangle SAL” checkbox is checked, it will be possible to perform a SAL (Scan Average Level) measurement on an image.
Rectangle PVI		When the “Rectangle PVI” checkbox is checked, it will be possible to perform a PVI (Pixel Value Index) measurement on an image.
Rectangle EI		When the “Rectangle EI” checkbox is checked, it will be possible to perform an EI (Exposure Index) measurement on an image.
Calibrate a line		When the “Calibrate a line” checkbox is checked, it will be possible to perform a line calibration.
Calibrate a circle		When the “Calibrate a circle” checkbox is checked, it will be possible to perform a circle calibration.
ERMF calibration		When the “ERMF calibration” checkbox is checked, it will be possible to perform an Estimated Radiographic Magnification Factor (ERMF) calibration.
Measure an angle		When the “Measure an angle” checkbox is checked, it will be possible to perform an angle measurement.

Measure a distance		When the “Measure a distance” checkbox is checked, it will be possible to perform a distance measurement.
Measure a leg difference		When the “Measure a leg difference” checkbox is checked, it will be possible to perform a leg difference measurement.
Measure scoliosis		When the “Measure scoliosis” checkbox is checked, it will be possible to perform a scoliosis measurement.
Annotation Color		When the “Annotation Color” checkbox is checked, it will be possible to set the color for a selected annotation. The operator selects an annotation on the image and afterwards a color from the Annotation Color drop-down box to set the color of an annotation.

Transformation Palette

Item	NX Control	Remark
Rotate Clockwise		The button is present in the NX Editing environment when the checkbox is enabled in the Transformation Palette. The “Rotate Clockwise” functionality is used to rotate an image clockwise.
Rotate Counter Clockwise		The button is present in the NX Editing environment when the checkbox is enabled in the Transformation Palette. The “Rotate Counter Clockwise” functionality is used to rotate an image counter clockwise.

Freehand Rotate		The button is present in the NX Editing environment when the checkbox is enabled in the Transformation Palette. The “Freehand Rotate” functionality is used to rotate an image by an arbitrary angle.
Flip		The button is present in the NX Editing environment when the checkbox is enabled in the Transformation Palette. The “Flip” functionality is used to flip an image over the vertical axis.
Show/Hide Square Marker		The button is present in the NX Editing environment when the checkbox is enabled in the Transformation Palette. The “Show/Hide Square Marker” functionality is used to toggle the presence of the Square Marker.

View Palette

Item	NX Control	Remark
Zoom In		When the “Zoom In” checkbox is checked, it will be possible to zoom in on a viewed image. When the button is not checked, and thus not present in NX, it is still possible to perform zoom actions with the context menu and mouse scroll wheel.
Zoom Out		When the “Zoom Out” checkbox is checked, it will be possible to zoom out on a viewed image. When the button is not checked, and thus not present in NX, it is still possible to perform zoom actions with the context menu and mouse scroll wheel.
Zoom to ROI		When the “Zoom to ROI” checkbox is checked, it will be possible to zoom in to a specific region of interest on the image.

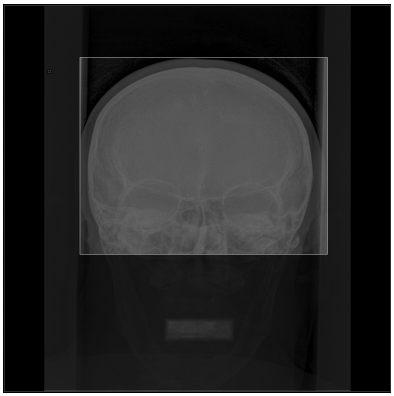
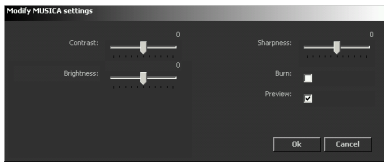
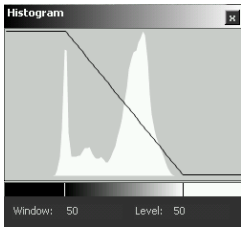
		The region of interest must be indicated on the image before the zoom is actually performed.
Reset Zoom		When the “Reset Zoom” checkbox is checked, it will be possible to reset the zoom factor to its original state. This function is only applicable for images on which zoom actions (zoom in and/or zoom out) have been performed.
Enable/ disable Shutters		When the “Enable/disable Shutters” checkbox is checked, it will be possible to apply manual shutters on an image:  When disabling the shutter function, the shuttered area will remain indicated, the shutter borders will however not be editable anymore.
Enable/ disable split view		When the “Enable/disable split view” checkbox is checked, it will be possible to toggle the split view mode of an image.
Enable/ disable Full Screen		When the “Enable/disable Full Screen” checkbox is checked, it will be possible to toggle the full screen view mode of an image.

Image Processing Palette

Item	NX Control	Remark
Window Level		When the “Window Level” checkbox is checked, it will be possible to adjust the window and level settings of an image.
Undo Window Level		When the “Undo Window Level” checkbox is checked, it will be possible to discard the window and level changes made to an image.
Musica		When the “Musica” checkbox is checked, it will be possible to display and use the interactive Musica dialog box: 
Collimation		When the “Collimation” checkbox is checked, it will be possible to perform collimation actions on the viewed image. On DR images and CR 10/12/15-X images, the collimation area also defines the cropping area.
Collimation Rectangle		When the “Collimation Rectangle” checkbox is checked, it will be possible to draw rectangular collimation shapes on the viewed image. On DR images and CR 10/12/15-X images, the collimation area also defines the cropping area.

Collimation Polygon		When the “Collimation Polygon” checkbox is checked, it will be possible to draw polygon collimation shapes on the viewed image. On DR images and CR 10/12/15-X images, the collimation area also defines the cropping area.
Collimation Circle		When the “Collimation Circle” checkbox is checked, it will be possible to draw circular collimation shapes on the viewed image. On DR images and CR 10/12/15-X images, the collimation area also defines the cropping area.
Invert Collimation Area		When the “Invert Collimation Area” checkbox is checked, it will be possible to invert an indicated collimation area on the viewed image.
Collimation Border		When the “Collimation Border” checkbox is checked, it will be possible to toggle the collimation border of the viewed image. On DR images and CR 10/12/15-X images, this tool turns on or off cropping of the non-relevant image area's.
Histogram		When the “Histogram” checkbox is checked, it will be possible to toggle the display of the image histogram:  **Figure 209: e.g. histogram for MUSICA image processing**
Burn		When the “Burn” checkbox is checked, it will be possible to toggle the burn of the viewed image.

		
Invert		When the “Invert” checkbox is checked, it will be possible to invert a viewed image.
Enable/ Disable Background Darkening		When the “Enable/disable Background Darkening” checkbox is checked, it will be possible to toggle the background darkening of a mammo image.

Using the Offline NX Service and Configuration Tool

Topics:

Introduction

The Offline NX Service and Configuration Tool is an auxiliary tool for the Field Service Engineer. The Field Service Engineer can load and configure any NX configuration file on the offline NX Service and Configuration Tool installed on a service PC. This enables the Field Service Engineer to prepare the configuration file before going to the site.

The offline NX Service and Configuration Tool provides basically the same functionalities as the online NX Service and Configuration Tool (= the one installed on a real NX system). There are some limitations though which are described in this document.

Every NX version starting from NX2.0.68XX will have its own version of the offline NX Service and Configuration Tool. The different versions can be installed next to one another (the version number is part of the name of the installation path: C:\Agfa\Healthcare\NX\Offline NX Service and Configuration Tool <Version>\Bin).

Prerequisites

- Windows 7 SP1, Windows 8, Windows 8.1, Windows 10.
- Minimum screen resolution: 1024 x 768
- Local administrator rights on the PC on which you want to install and run the offline NX Service and Configuration Tool.

Limitations

There is no access to the NX database. Input and output goes via export files (xml). These are the same type of files as used in the previous NX versions with the online NX Service and Configuration Tool. Activating, loading or restoring of the configuration is not possible.

Further:

- No license file required!
- No authentication configuration (users and roles): as this data is stored in a separate repository
- No test connection functionalities
- No query RIS
- No test image for the monitor check
- No scan for in-room NXs (CMS functionality)
- No delete session (as there is no NX DB)
- No automatic backup is foreseen

Related Links

Licenses on page 274

Licenses

The offline NX Service and Configuration Tool does not work with real licenses. All licenses are available without having to load an ALF file!

Therefore you must manually disable licenses in the 'Security and License management' pane in order to come as close as possible to the online NX situation. Remember that enabling\disabling licenses in the NX Service and Configuration Tool has a important impact on the GUI and verification logic in the NX Service and Configuration Tool!

Using the offline NX Service and Configuration Tool

1. Start > Programs > Agfa > NX >Offline NX Service and Configuration Tool 3.0.XXXX >Start Offline NX Service and Configuration Tool XX.

   The startup screen of the tool offers following possibilities:

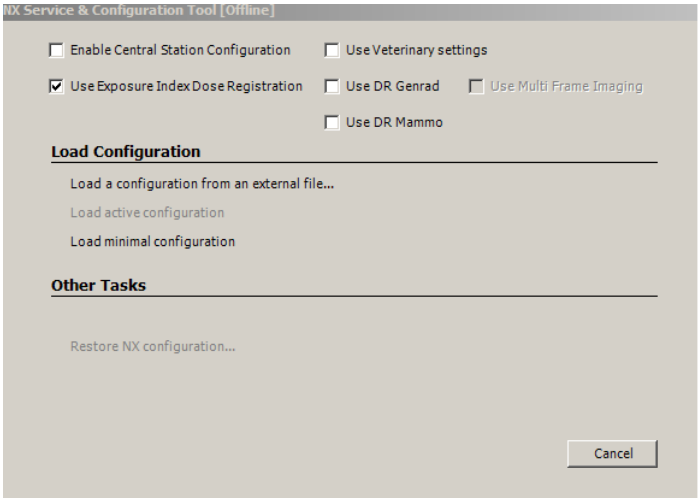


Figure 210: Offline NX Service and Configuration Tool Startup dialog box.

- Enable Central Station Configuration:

  You can make a distinction between configuring for a normal NX or a CMS NX.

  Check this box to configure a CMS. Only here this choice can be made!
- Use Exposure Index Dose Registration
- Use Veterinary Settings

  Check this box to configure a system with a veterinary license.
- Use DR GenRad

  This option is only enabled when the Exposure Index checkbox is checked.

  Check this box to edit a configuration for an NX Workstation that is connected to a DR Detector.
- Use Multi Frame Imaging

  For systems that support dynamic imaging (fluoroscopy, rapid sequence).
- Use DR Mammo

  For systems that are connected to a mammography DR Detector.

- Select the software license edition:

  Depending on the licenses available on the NX Workstation, the applicable version number must be selected.
- Load configuration from an external file:

  You can load an already existing configuration file in the NX Service and Configuration Tool. This can also be an export file made by an online NX Service and Configuration Tool or a previous version of NX NX Service and Configuration Tool.
- Start creating a configuration from scratch by loading a minimal configuration.

  The minimal configuration is different for non-CMS and CMS. This functionality is not available in the online NX Service and Configuration Tool. There, the NX database makes sure that a minimal configuration is always foreseen.

2. Set up the configuration as much as possible. Refer to “Limitations” .
3. Export the configuration to a file.

   Before exporting, the configuration is automatically verified. When verification errors occur, one still has to option to save anyway (press <Continue>).

Figure 211: Offline NX Service and Configuration Tool Startup dialog box - Verification dialog box.

4. Import this export file in an online NX NX Service and Configuration Tool, finish the configuration and activate it.

Related Links

Limitations on page 273

Special: Configuring Bitmap Images to be Printed on Film

When configuring bitmaps to be printed on film, you can upload a bitmap file in the NX Service and Configuration Tool:

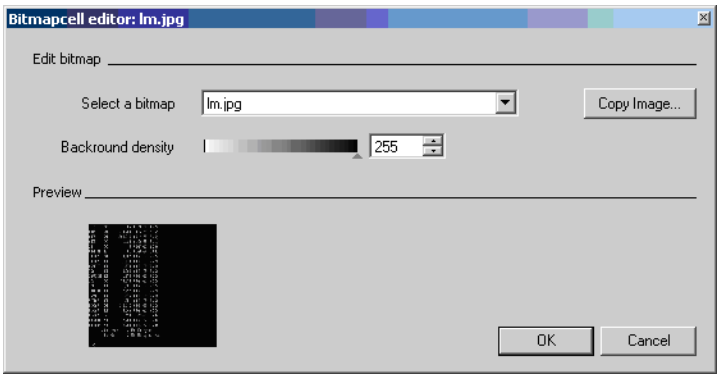


Figure 212: Offline NX Service and Configuration Tool - bitmap cell editor.

Clicking the button **Copy Image** will copy the file to a specific folder on the PC:

- On an offline NX Service and Configuration Tool system the bitmap file is copied to : C:\Agfa\Healthcare\NX\Offline.Config.Tool.XX\Bin\DataFiles \Configuration\BitmapFiles
- On an online NX Service and Configuration Tool, this directory is: C:\Agfa \Healthcare\NX\Configuration\BitmapFiles

When the configuration is activated on an online NX Workstation, you must manually copy the files from the offline BitmapFiles-folder to the BitmapFiles-folder on the NX Workstation.